



# Cisco Unified Contact Center: The way to the innovation!



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# AGENDA

- Unified Contact Center Management Portal
- Unified Mobile Agent
- Unified E-Mail & Web Interaction Manager
- What's Next
  - Unified Expert Advisor
  - Unified Intelligence Suite
  - Unified Customer Voice/Video Portal

# Terminology

- Unified Contact Center Express (UCCX)
- Unified Contact Center Enterprise (UCCE)
- Unified Contact Center Hosted (UCCH)
- Unified ICM Enterprise (UICME)
- Unified ICM Hosted (UICMH)
- Unified Customer Voice Portal (UCVP)
- Unified IP-IVR (UIPIVR)



# Unified Contact Center Management Portal



# Contact Center Management Challenges

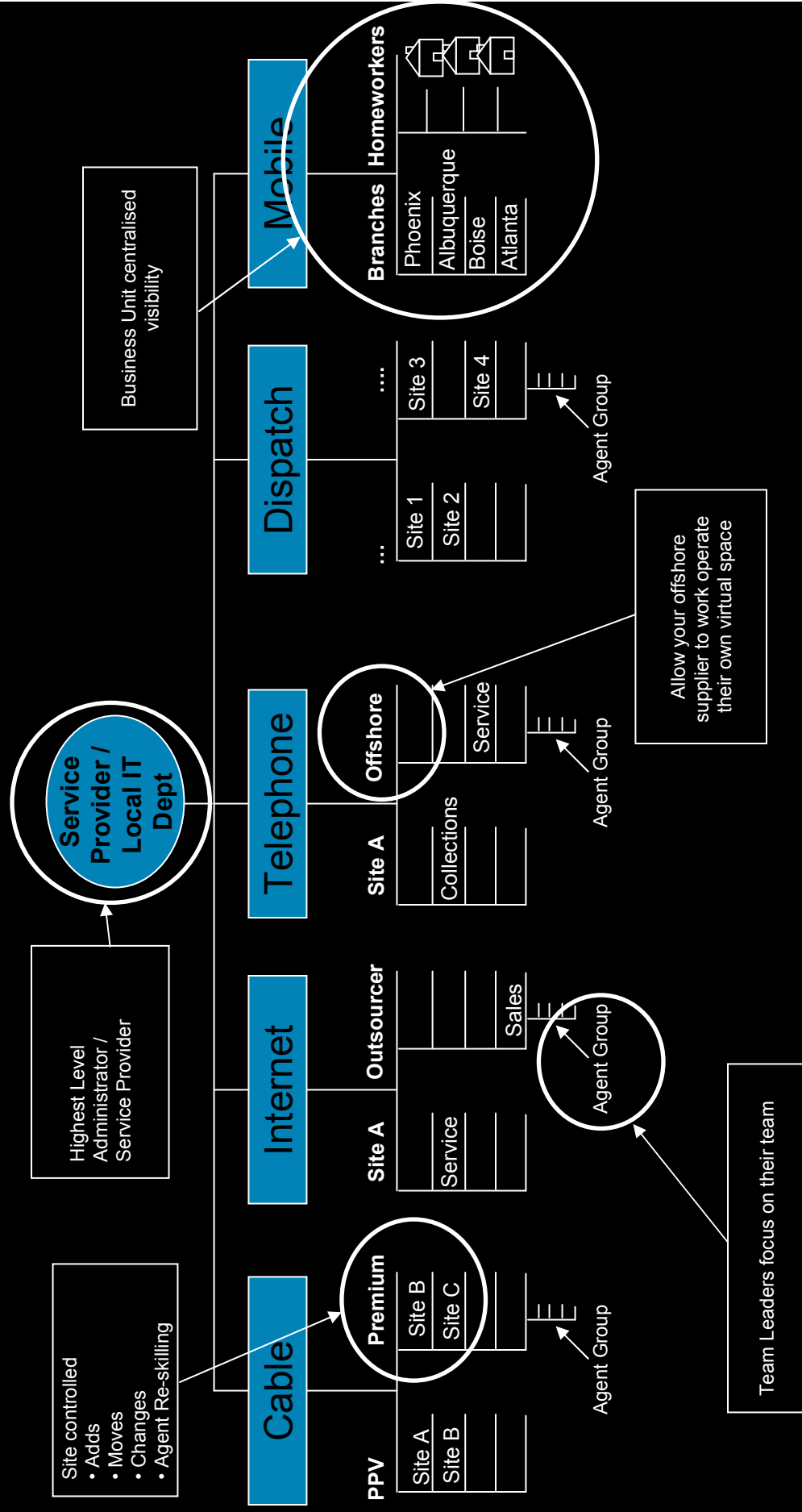
For the Enterprise or Service Provider:

- Administration of the managed service or enterprise – support for **multiple customers/business units** with a wide range of Virtual ACD requirements
- **Autonomy** for the subscribing customers/business units
- Assignment and **management of global resources** across the managed service or enterprise (things like agent counts per unit, number of users, ..., enforce/manage limits)
- Need to **reduce** support costs and...
- **Minimize** operational costs (drive more capabilities to end-users)

For the End User or Business Unit Manager:

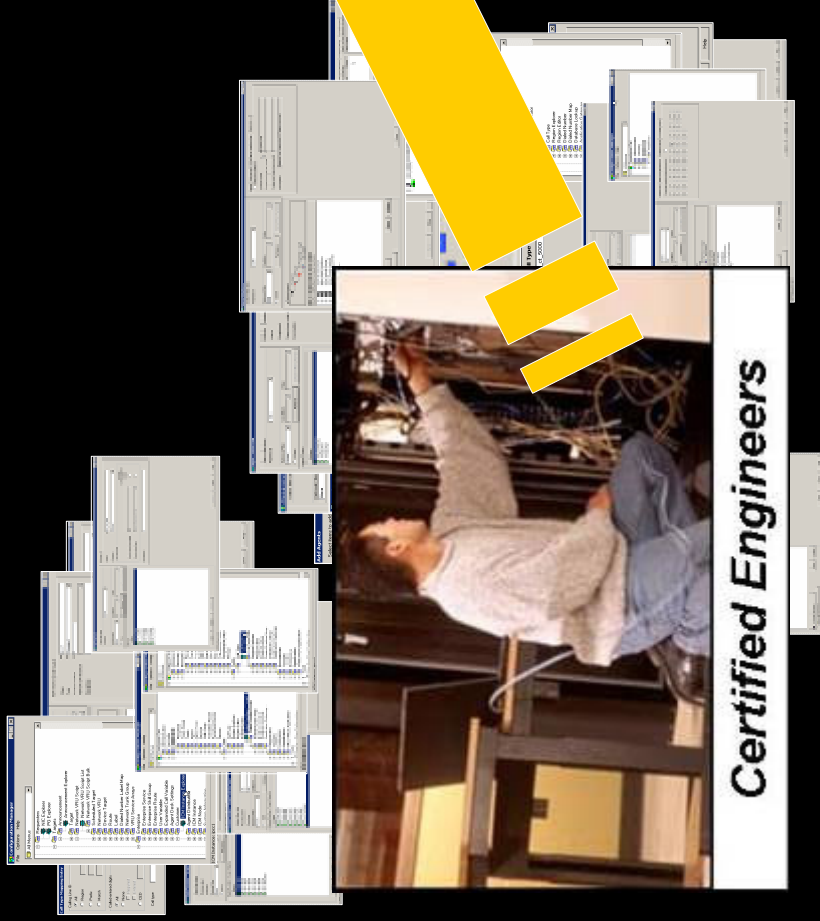
- **Daily management** of their Virtual ACD
- **Multi-level administration**
- **Audit Reporting**

# Management of Virtualized Resources



# Before and After

## From complex technical activity ...



... to simple business user functions



# Contact Center Management Portal Overview

- **Simplifies** Contact Center Operations
  - Unified provisioning of CCE and Communications Manager
- **Web-based Unified** User Interface
- **Partitioned** System Supporting Multiple Business Units
- **Hierarchical** Administration
- **Audit Tracking** of Configuration Changes
- Available with **CCE** and **CCH**, Release 7.1 and higher



# Contact Center Management Portal Basic Mode

- Basic Mode for majority of users
  - Manage Agent Teams
  - Agent Reskilling

The screenshot displays the Cisco Unified Contact Center Management Portal in a Microsoft Internet Explorer browser window. The page title is "Unified Contact Center Management Portal" and the URL is "http://xdemo200/es/agent\_reskilling.aspx?path=/Global%20Bank/Commercial/East%20Coast/Boston". The interface includes a navigation menu with "Home", "Help", "Settings", and "Logout". The current user is identified as "BOates" with a message "New initiative a major success".

The main content area is titled "Agent Re-Skilling" and contains a "Skillgroup" dropdown menu set to "Boston\_Business\_Loans". Below this, there are two sections:

- Agents in Current Skillgroup**: A table listing agents with checkboxes, status, and active dates.
- My Agents on Peripheral: CCM3\_1**: A table listing agents with checkboxes, status, and active dates.

Buttons for "Add" and "Remove" are located between the two tables. At the bottom, there are "Save" and "Cancel" buttons.

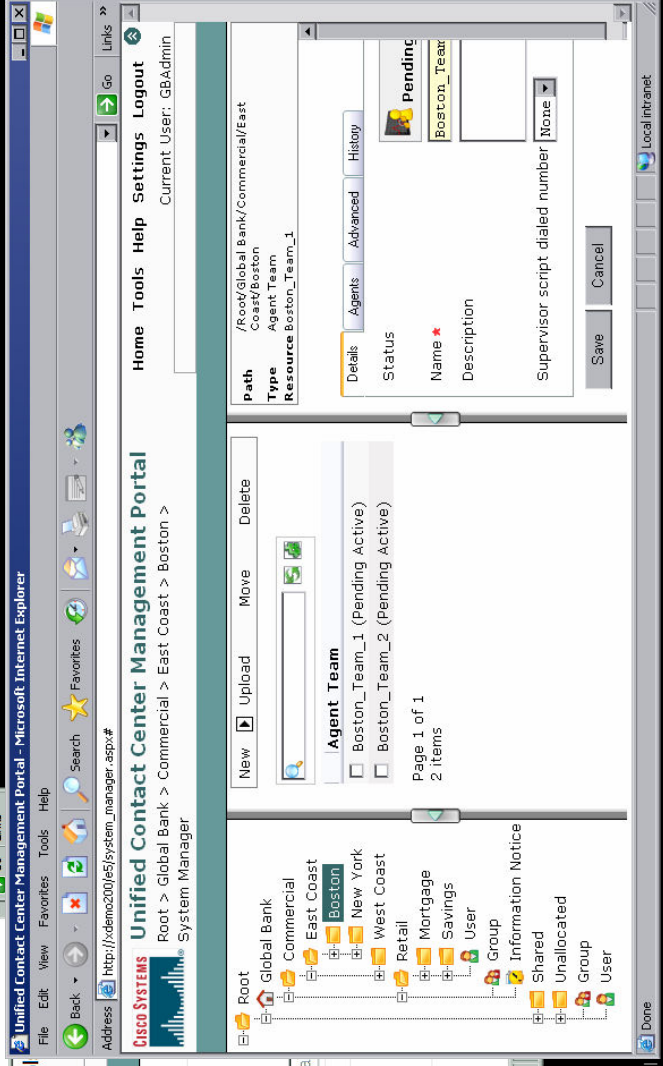
<input type="checkbox"/>	Agent Name	Status	Active Dates
<input type="checkbox"/>	Owen, Barbara	Pending Active	06/06/2079 00:00:00
<input type="checkbox"/>	Townsend, Brad	Pending Active	06/06/2079 00:00:00

<input type="checkbox"/>	Agent Name	Status	Active Dates
<input type="checkbox"/>	Oates, Beth	Pending Active	06/06/2079 00:00:00
<input checked="" type="checkbox"/>	Oliver, Bridget	Pending Active	06/06/2079 00:00:00
<input checked="" type="checkbox"/>	O'Neill, Brenda	Pending Active	06/06/2079 00:00:00

# Contact Center Management Portal Advanced Mode

- Advanced Mode for Administrators
  - View Audit Reports
  - Create Resources
  - Manage Security



# Contact Center Management Portal Roadmap Features

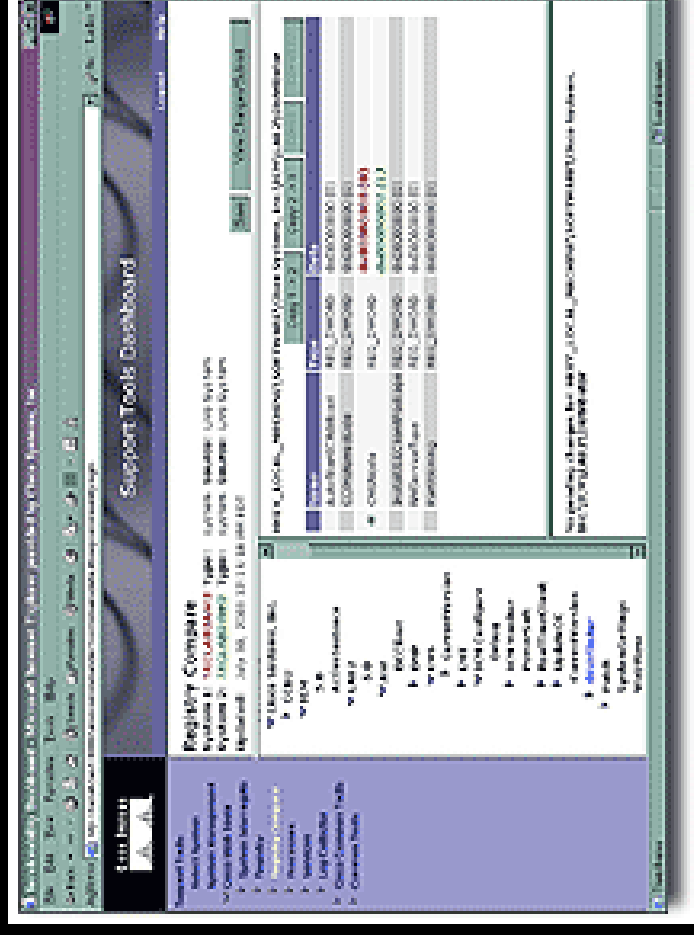
- Expanded Deployment Models for CCE and CCH
- Outbound Option Management
- Rapid Application Development (RAD) – Partitioned Scripting
- Partitioned CTI OS Security

# Cisco Support Tools

- Serviceability tool dashboard
- Common Web-based User Interface for all tool
- Provide customers with tools to manage their systems

Ability to pull log files from Call Manager, CVP, IP-IVR, Web Collaboration Option, and E-Mail Manager Option

- Single entry point reduces required time to locate and resolve issue
- Set trace level
- Provides a single entry point to all the log files
- Registry compare
- Software process list



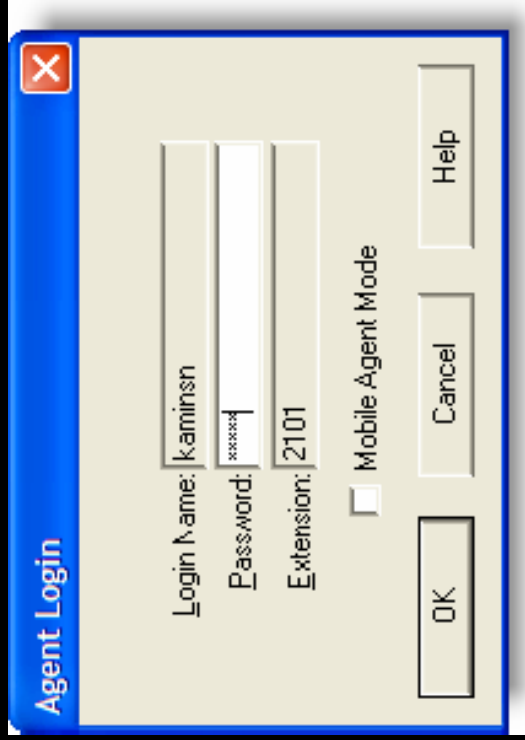
# Unified Mobile Agent



# Unified Mobile Agent Overview

- Supported by CTI OS, CAD, and CAD BE
- Agent can use any direct dial phone
  - Agent enters phone number at login
  - “Nailed Up” or “Call-by-Call” delivery modes
- Supervisor Desktop indicates agents are mobile, and displays phone number
- Phone calls remain under CCE/UCM control
- SPAN Silent Monitoring is supported with CTI OS and CAD
- Centralized recording possible
- Design Considerations
  - Reduced PG Capacity
  - Requires two gateway ports per active call

# Unified Mobile Agent Login



Agent Login

Login Name: kaminsh  
Password: \*\*\*\*\*  
Extension: 2101

Mobile Agent Mode

OK Cancel Help



Mobile Agent Login

Login Name: kaminsh  
Password: \*\*\*\*\*  
Extension: 5000 (Local CTI Port)

Mobile Agent Mode

Mobile Agent Parameters

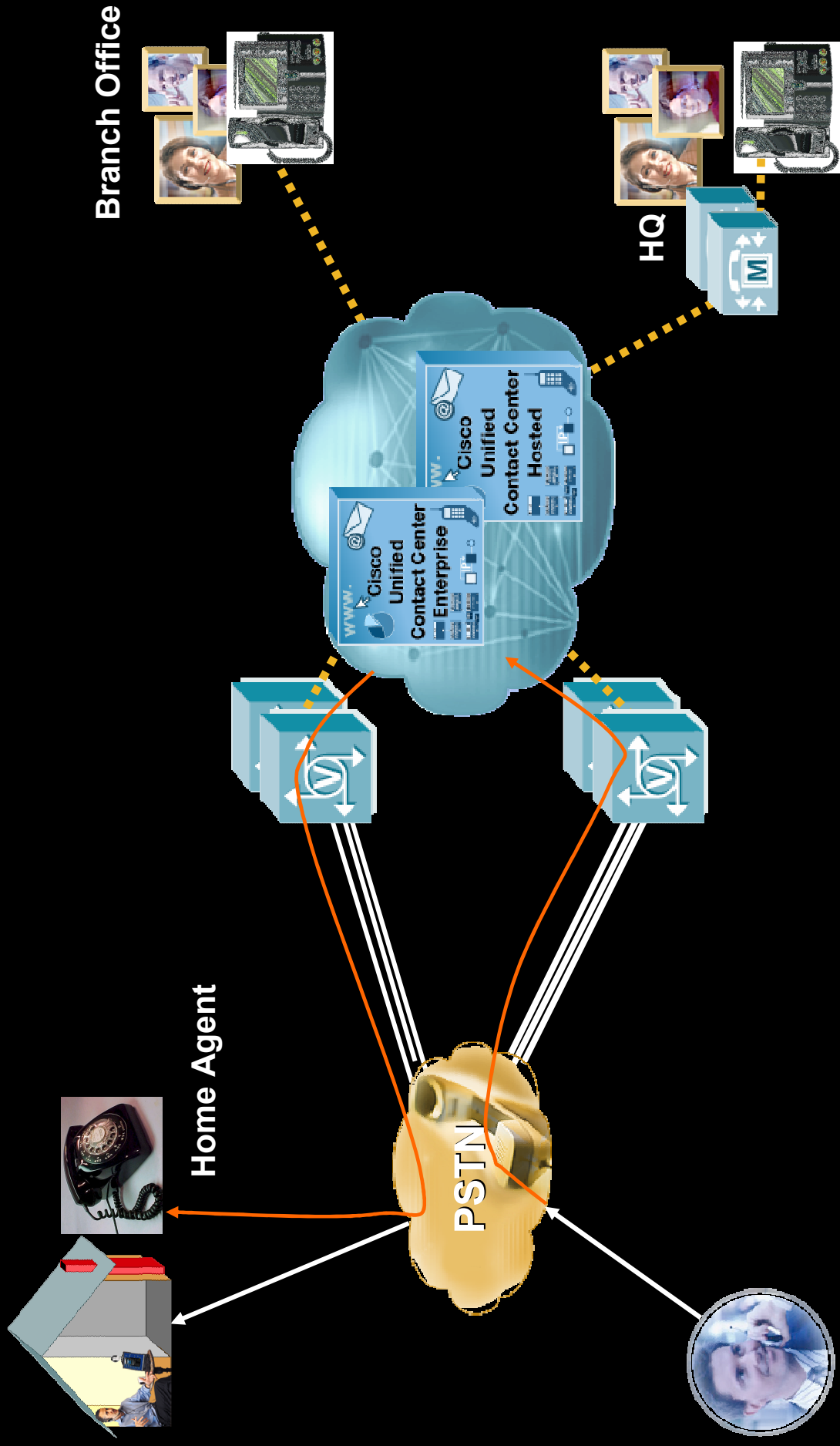
Nailed Up Call Mode  
 Call by Call Mode

Agent Mobile Phone Number 7635551212

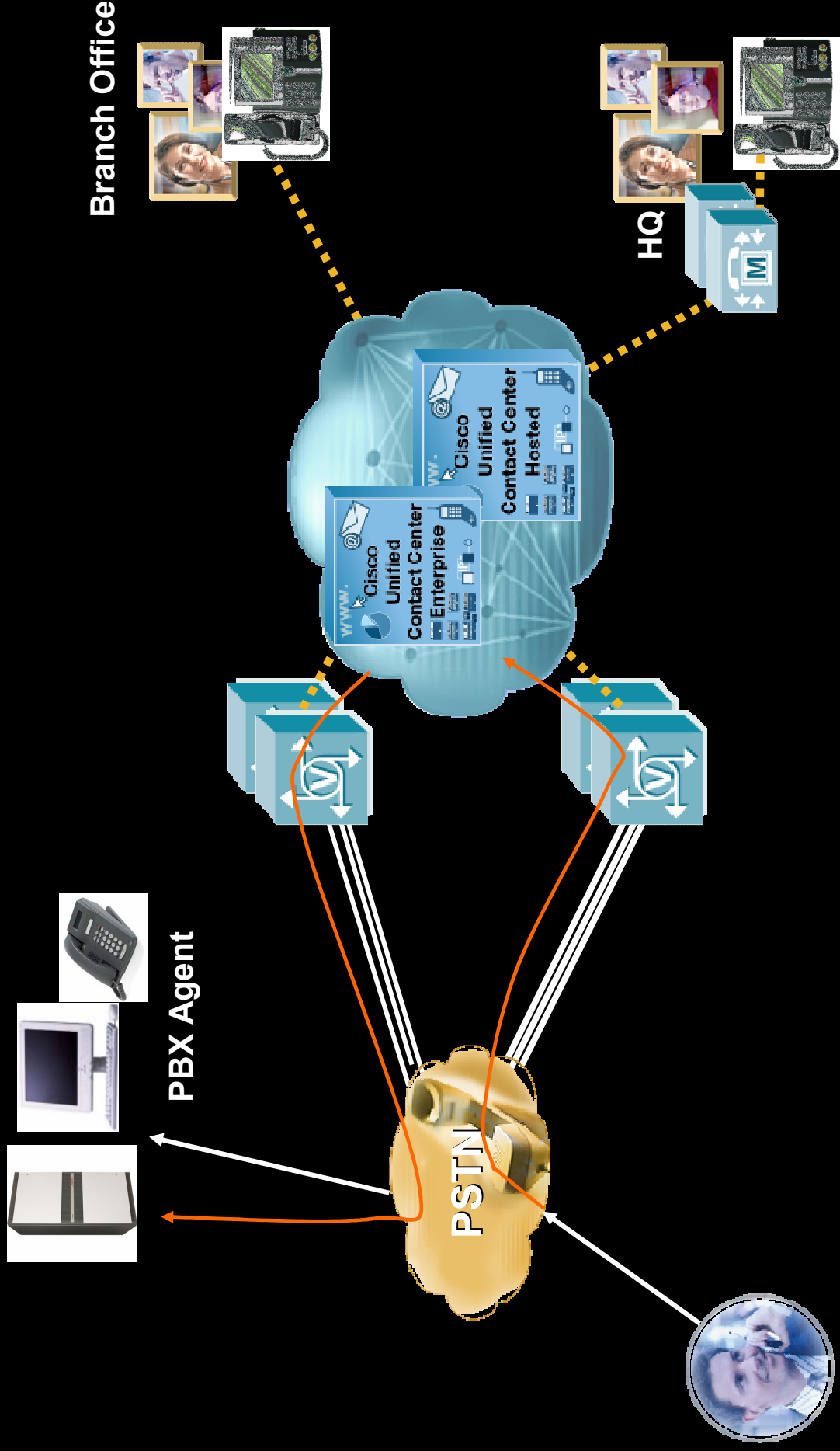
OK Cancel Help



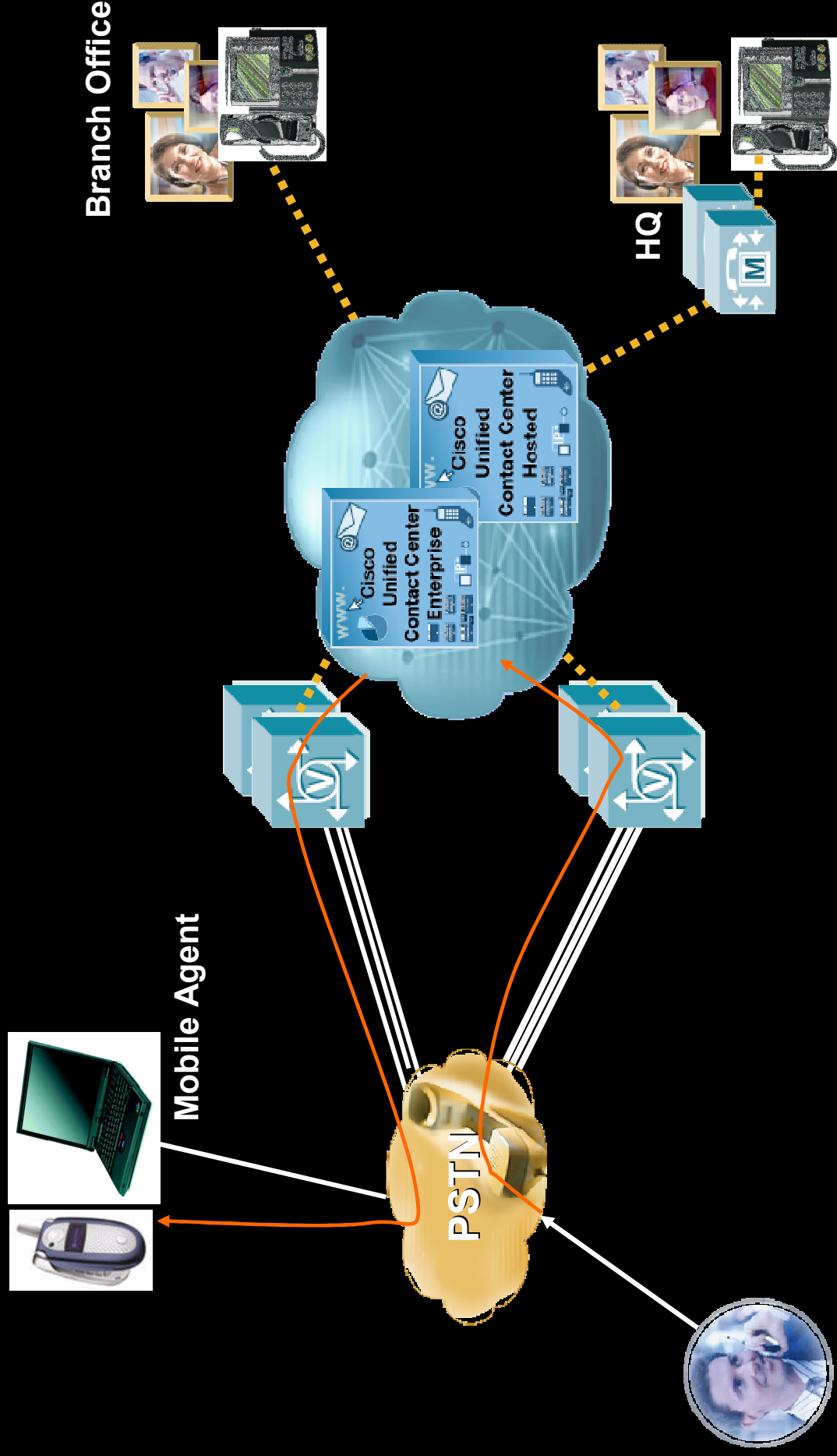
# Unified Mobile Agent At Home Agent



# Unified Mobile Agent Remote PBX Agent



# Unified Mobile Agent Mobile Agent



# Unified E-Mail & Web Interaction Manager



# How does Unified E-Mail Interaction Manager Work?

When a customer E-Mail or Web form inquiry is received, Unified EIM:

- Can send an automatically generated acknowledgement, based on the date and time it was received, its subject, or the customer's profile
- Analyzes the content of the E-Mail, generates a list of suggested responses, and automatically sends the best response ...
- ... or if the system determines an agent response is required, routes the E-Mail to the best resource to handle it
- Quickly facilitates agent responses by suggesting templates for responses and enables agents to drag and drop the best response into the reply
- Can use power of ICM and Contact Center Enterprise for routing and reporting. Universal Queuing with Contact Center Enterprise.

# Unified E-Mail Interaction Manager Intuitive Agent Desktop

The screenshot displays the Cisco Interaction Manager Agent Console interface, which is a Microsoft Internet Explorer browser window. The interface is divided into several sections:

- Inbox:** A table listing activities with columns for Queue name, Activity ID, Subject, Created on, Contact point, and Due on. The 'Due on' column contains red text indicating overdue tasks.
- Information: Activity Body:** A section showing details for a selected activity, including 'From', 'To', 'Cc', and 'Subject'.
- Reply:** A section for replying to the email, showing the original sender and subject.
- Content:** The main body of the email, including a greeting and a thank you note.

Three callout boxes highlight specific features:

- Visual cues for overdue tasks:** Points to the red text in the 'Due on' column of the inbox table.
- Suggested Responses, Bookmarks, Spell-check:** Points to the toolbar above the email content.
- Knowledgebase, Customer History, External Links:** Points to the toolbar above the email content.

Queue name	Activity ID	Subject	Created on	Contact point	Due on
Alliant	4632	order	2/28/2006 10:53:14 PM	ajuneja@eGain.com	
Alliant	4633	order	2/28/2006 10:53:14 PM	ajuneja@eGain.com	4/9/2006 9:00:27
Alliant	4677	Order #1234566	3/3/2006 2:57:13 PM	stratos.davlos@egain.com	4/9/2006 9:00:27
Alliant	4684	test	3/6/2006 10:53:56 AM	stratos.davlos@egain.com	
Alliant	12186	RE: details about the immove.3.400 plan	4/9/2006 9:32:35 PM	ajuneja@eGain.com	

From: stratos.davlos@egain.com  
 To: eserv7test62@ems00600.egain.net  
 Cc:  
 Subject: Order #1234566

Dear Stratos Davlos,  
 Thank you for your email.

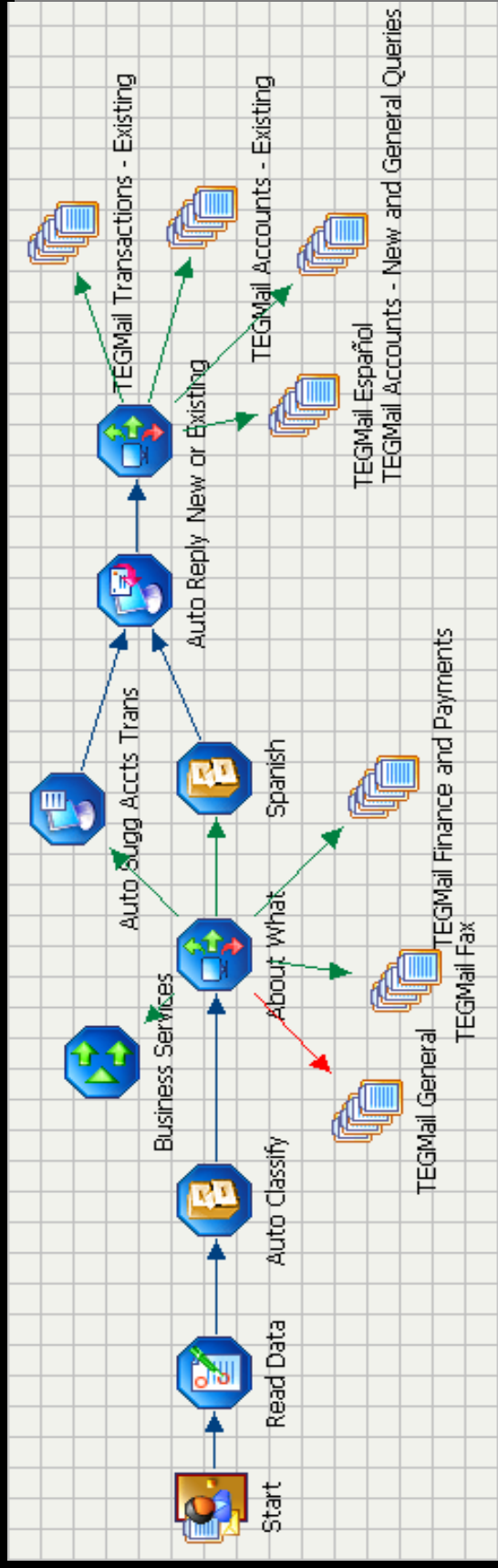
Sincerely,  
 Fred Smith



# Unified E-Mail Interaction Manager

## Extensible Graphical Workflow Editor

- Inbound and Outbound Workflows
- Auto-response / Suggested response based on content analysis



- Routing to Queues or Preferred Agents
- Routing via Contact Center Enterprise or ICM
- Access external data for routing



# Unified E-Mail Interaction Manager

## Features

- Full HTML E-Mail support (inbound and outbound)
- Large attachments for today's content
  - voicemail, images, faxes, video
- Attachments from desktop or knowledgebase
- Routing based on content analysis
- Outbound workflows
  - Approval queues
  - May be triggered by content analysis
- Overdue workflows, alarms
  - When E-Mail is beyond service level threshold
- Fully Integrated w/ CCE/CCH
- UI Localization – French, Italian, German, Spanish, Dutch

# Unified E-Mail Interaction Manager

## Fax, Voicemail, SMS Handling

- Unified EIM offers the flexibility to handle other asynchronous media
- Gateway converts FAX, SMS or voicemail to an email with an attachment or link to the media (Gateways are not part of Unified EIM)
- Routed and reported upon like e-mail
- Requires integration by a partner
- Client applications or plug-in may be required on agent desktop

PDF or TIFF viewer for fax

Media Player for voicemail

# How does Unified Web Interaction Manager Work?

When a customer requests live help from the Web, Unified WIM:

- Can provide for a voice callback\* or text chat along with co-browsing
- Information gathered on web site can be used to ensure routing to the right agent
- Once connected, agent and customer can lead one another to web pages and fill forms collaboratively while discussing issue via text chat or voice\*
- Integrated Knowledge base allows agents to respond quickly and effectively
- Agent may work on multiple chat sessions at the same time
- Can use power of ICM and Contact Center Enterprise for routing and reporting. Universal Queuing with Contact Center Enterprise.

\* Requires Contact Center Enterprise or ICM Enterprise with Avaya ACD

# Unified Web Interaction Manager Intuitive Agent Desktop

The screenshot displays the Cisco Interaction Manager Agent Console. On the left, there is a navigation pane with 'My Work' and 'My Activities' sections. The 'My Activities' section shows a list of activities with columns for Case ID, Activity, Subject, Customer, and Time since last activity. The main area shows a list of chat sessions with status indicators (green for active, red for waiting). A call log table is visible below the chat list.

S...	Case ID	Acti...	Subject	Customer ...	Activity du...	Time since ...	Chat status
1	5486	6595	Password	JC Rao	00:59	00:15	Waiting for yo...
4	5487	6672		Robert Medl	05:01	00:59	Waiting For cu...
2	5499	6596	HELP!	Pete Rose	01:15	01:15	Waiting for yo...
6	4999	7100	...hey man...	anonymous	11:12	03:01	Customer exit...

Below the chat list, a call log table is visible:

Case ID	Activity	Subject	Customer	Time since last activity	Chat status
5486	6595	Password	JC Rao	00:59	00:15
5487	6672		Robert Medl	05:01	00:59
5499	6596	HELP!	Pete Rose	01:15	01:15
4999	7100	...hey man...	anonymous	11:12	03:01

The right side of the console shows an active chat window with a message history and a text input field. The chat history shows a message from 'JC: Password' and a response from 'Tim: Hi, JC. What can I do for you?'. The text input field contains the message 'Sure, what is the street you grew up on?'. Below the chat window, there are buttons for 'Send' and 'Open cases: 9'. The bottom of the console shows a 'User name: etech\_da' and 'Language: English'.

Multiple simultaneous chat sessions  
Red if awaiting input

Push web pages  
Knowledgebase  
Customer History  
External Links

Frequently-used responses  
Spell Check

# Unified Web Interaction Manager

## Features

- Single or Multi-Session Chat
  - Configurable number of simultaneous chat sessions
  - Color coding and timestamps to improve usability
- Single desktop for Multi-Session Chat, Blended Collaboration and E-Mail
- Chat transcripts (can be e-mailed at end of session)
- Use information gathered on the web to route requests\*
- UI Localization – French, Italian, German, Spanish, Dutch

\* Available with Enterprise/Hosted products only

# Unified Interaction Manager Reporting

- WebView reports on E-Mail, Chat, Blended Collaboration Agent, skill group, call type Agent reporting across channels
- Detailed reports on Interaction Manager
  - Transcripts
  - Customer history
  - E-Mail alias reports
  - Classification
  - Knowledgebase usage reports

# Unified Web Interaction Manager

## 4.3 Features

- **Advanced Collaboration**
  - Two-way Follow-me browsing
  - Share personalized, dynamic or secure content
  - Assisted form filling
  - Agent restrictions
- **Chat & Collaboration Integration w/ CCE/CCH**
  - Blend voice (inbound, outbound, call back), e-mail, chat, collaboration
  - System can prioritize across media
  - E-Mail may be interruptible
  - Agent may be assigned multiple chat and e-mail tasks
- **Voice-Web Integration**
  - Offer Call Back from your Web site
  - Blended Collaboration
- **SQL 2005 support**
- **Copy Workflows (within department)**
- **UI Localization – Canadian French, Chinese, Japanese, Korean**

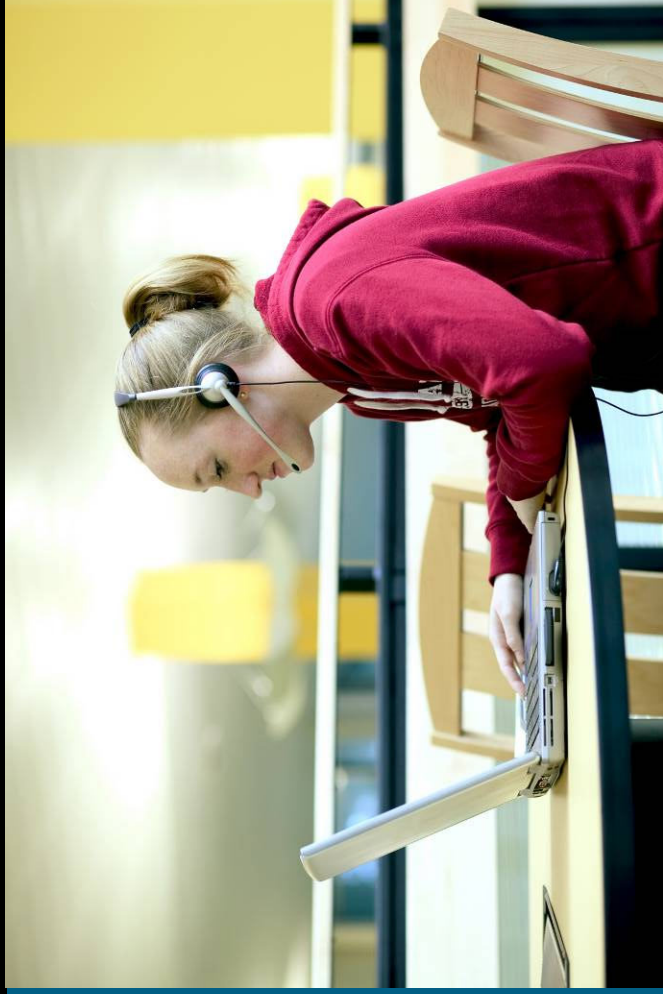


# Unified Web Interaction Manager

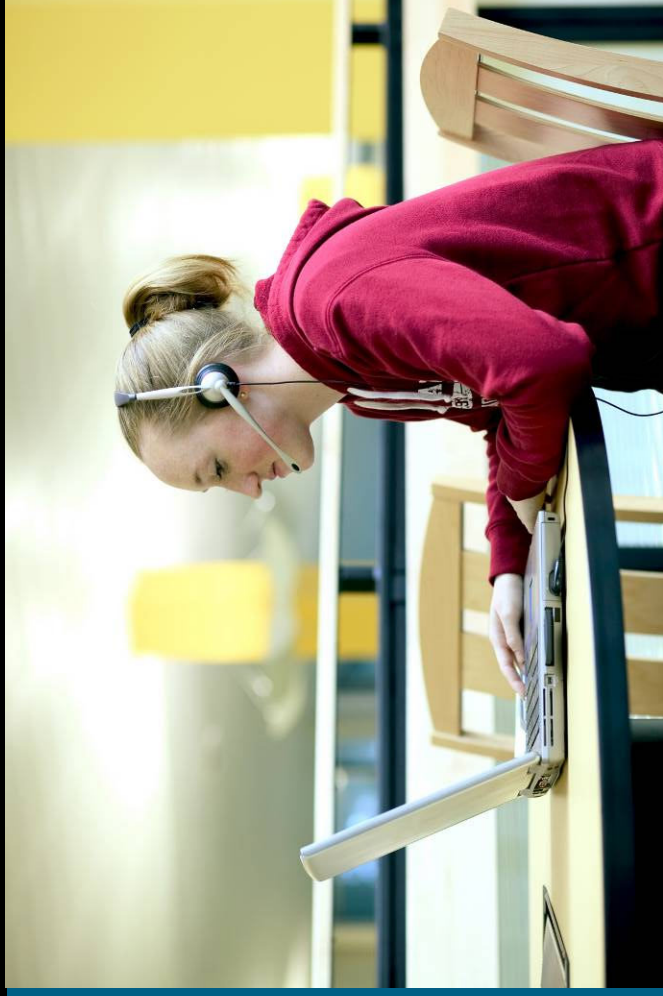
## Roadmap Features

- **Multi-Channel Desktop**
  - Single Sign-on, Call Control, Agent State, Call Context
  - Voice calls listed in customer history
- **Proactive Chat**
  - Chat invitations (e.g. popup window) to customers on your web site
- **CRM & Application Integration**
  - CRM connectors for e-mail and chat
  - API for custom development
- **Add Collaboration to Voice Call (MeetMe)**
- **Add Voice Call to Chat**
- **Web Self Service (Solutions+)**
- **Scalability Improvements**
- **Fault Tolerance**

# What's Next



# Unified Expert Advisor



# Unified Expert Advisor Overview

- The Cisco Unified Expert Advisor Option expands the scope of the Contact Center by allowing enterprise knowledge workers to handle incoming customer calls without the need for the rigid tools and business rules typically found in formal Contact Centers.
- It is an add-on to Cisco's Contact Center solutions.
- Expert Advisor will typically leverage Unified CVP for queuing and self-service but will operate with any service control based IVR.
- The solution is dependent on a Unified ICM, Unified Presence and Instant Messaging infrastructures. It does not require formal Contact Center CTI agents to be part of the call flow.

# Unified Expert Advisor

## Overview (cont'd)

- The Expert Advisor system acts as middleware to bridge calls transferred from the queue or formal agents to a set of knowledge workers.
- Formal agents do not need to have visibility of the presence of experts/knowledge workers. Agents transfer a call intended to a presence-enabled expert to a number representing an expert skill group.
- The system would then match up the contact's call criteria using one of the many selection strategies with an available resource or expert. This happens after the system (optionally) offers a call task to one or more matched experts with pre-call data.

# Unified Expert Advisor

## Overview (cont'd)

- Experts establish their presence and availability to take a contact by the state (Available or Away) of their Instant Messaging (IM) client. The IM client effectively serves as the "desktop" for experts, who establish their willingness to take a contact by responding to an IM contact request from the Cisco Expert Advisor system.
- Once an expert's availability and acceptance of the contact request are confirmed by the system, the customer contact is routed directly to the expert advisor by a self service application or transferred to the expert by the Contact Center agent who may have initially handled the contact. The Contact Center agent can also confer with the (system selected) expert advisor into a customer contact.

# Unified Expert Advisor

## Business Benefits

- Presence in Unified Communications enables corporations to reach high productivity gains
- Presence can directly improve on business processes and customer contact
- Better customer service when using presence-enabled knowledge workers as expert agents
- Experts allow first-call resolution and the enables contact centers to reach higher service levels









# Unified Expert Advisor Queuing Model

- 1 Assignment Queues → 1 ICM Skill Group
- Selection Strategies:
  - Queue Ordering:
    - Longest Available
    - Most Skilled
    - Least Skilled
    - Spatial
    - Closest match among Resource and Contact attributes
- Broadcast Strategy
  - Number of experts to be offered the task in parallel
  - Offer Task timeout
- Offer Handling
  - Expert Can Reject
  - Expert Cannot Reject

# Unified Expert Advisor

## Instant Messaging

- Offer Task presents data in tables or embedded in text
- Agent can respond:
  - n / no
  - y / yes
  - y@8005551212
  - or no response at all
- Message sets also include:
  - “Expert Agent Option is ready”
  - “Call has been accepted by another agent”
  - etc.
- Internationalized based on agent locale
- Fully customizable via OAMP

# Unified Expert Advisor Reporting

- Expert Advisor Reporting
  - Expert Advisor agent state events
  - Task termination detail
  - Contact termination detail
- UCCE Reporting
  - Everything else, including Expert Advisor agent real-time
- Reporting Infrastructure
  - Back end – Informix IDS Database
  - Reporting user interface – Crystal Reports templates

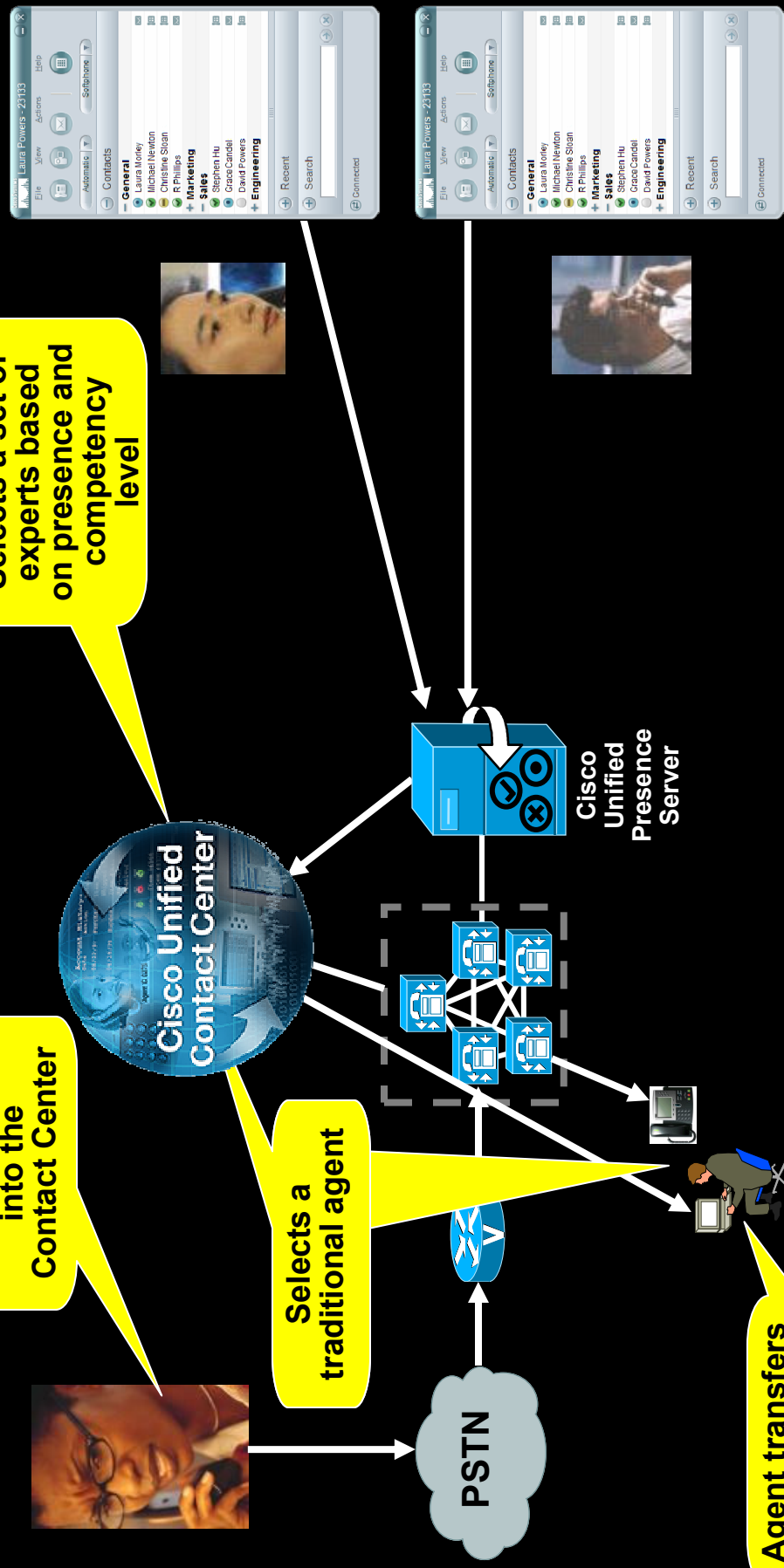
# Unified Expert Advisor Call Flow

Customer Calls into the Contact Center

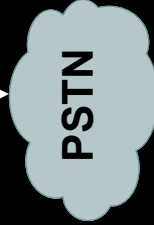
Selects a set of experts based on presence and competency level

Selects a traditional agent

Agent transfers caller to an expert



# Unified Expert Advisor Call Flow



**ANSWER WITH TEXT**

Are you available to take an incoming call?

**I cannot take an incoming call now**

- I will call you back in about 5 minutes
- I will call you back later
- I can take the call at 508 339-9431

**ANSWER WITH TEXT**

Are you available to take an incoming call?

**I can take the call at 508 339-9710**

- I will call you back in about 5 minutes
- I will call you back later
- I can take the call at 508 339-9710
- I cannot take an incoming call now

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t based on  
nce state  
ompetency  
level



Laura Powers - 23133

Contacts

- General
  - Laura Morley
  - Michael Newton
  - Christine Sloan
  - R Phillips
- Marketing
  - Yan Hu
  - Greg Cardel
  - David Fowers
- Sales
  - David Fowers
- Engineering
  - David Fowers

Reset Search Connected



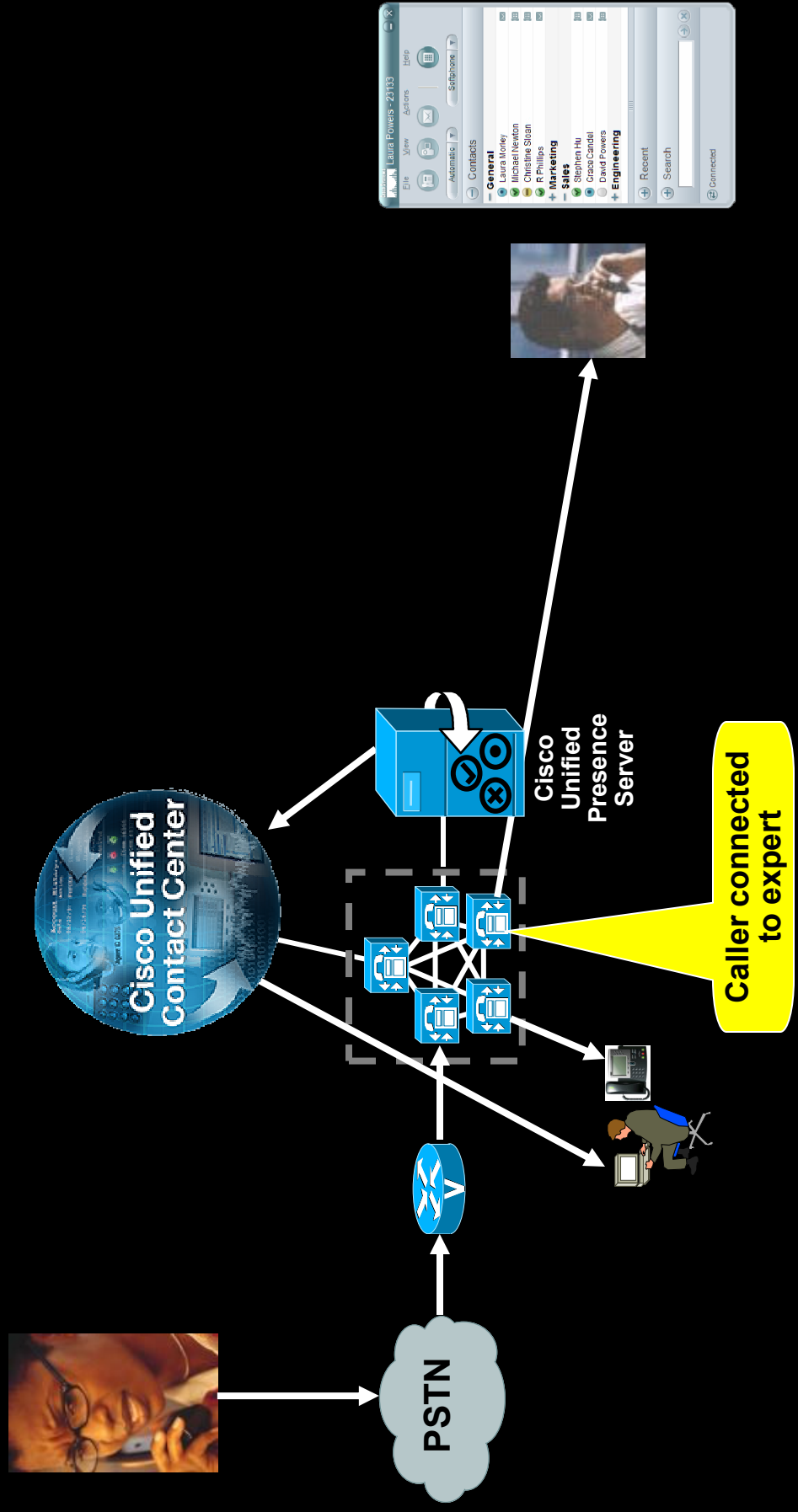
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Reset Search Connected

# Unified Expert Advisor Call Flow



# Unified Intelligence Suite



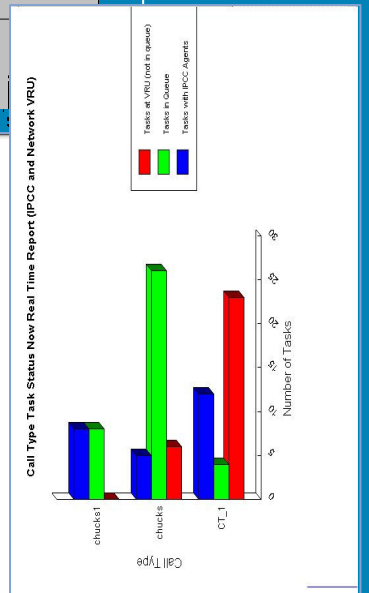
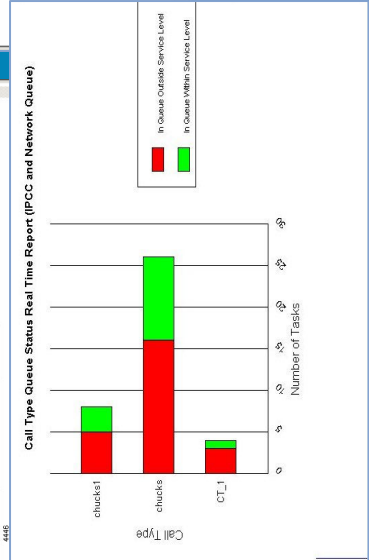
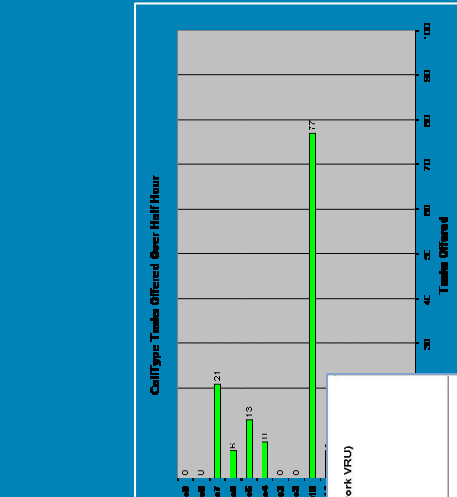
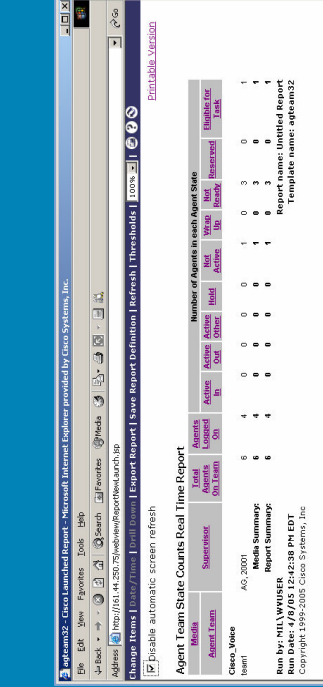
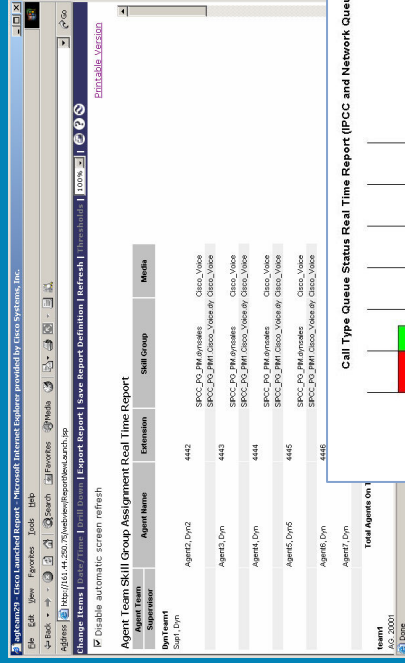


# WebView Reporting Legacy

- Web-based Outbound and Inbound Reports
- Real-time and Historical pre-built Templates
  - Agent/skill activity: Per agent, campaign, skill group
  - Campaigns: Talk time, handle time, % penetration
  - Dialers: Ports, call classification, campaigns
- Report Customizations using Sybase InfoMaker
- Report Scheduling and Export Capabilities
- Open and fully documented Database Schema
- Highly Available Duplex Architecture for persistent data gathering
- Scalable n+1 2-Tier Architecture

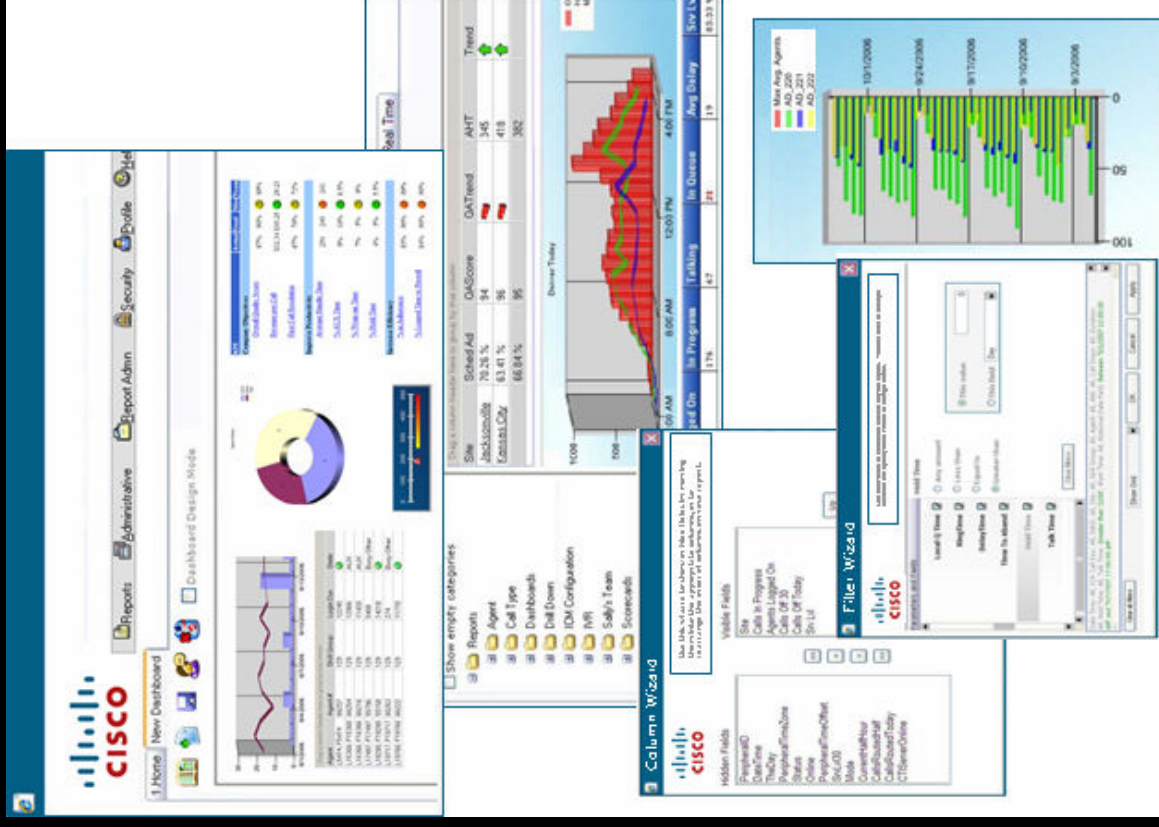
# WebView Report Samples

- Agent to Skill Group Mapping Report
- Agent Team State Counts Real Time Report
- Graphical Call Type Real-Time Report: Tasks Offered
- Graphical Call Type Real-Time Report : Queue Delay Status
- Graphical Call Type Real-Time Reports: Task Status
- Graphical Call Type Real-Time: Tasks in Queue within/outside Service Level
- Graphical Call Type Historical Reports: Service Level Abandon OT



# Unified Intelligence Suite Next-Generation Reporting

- Real-time and Historical Dashboards, Charts & Grids
- Easy-to-use, wizard based interface
- Native ad hoc reporting and customization
- Highly customizable platform
  - Access levels
  - Feature Sets
  - Thresholds and drill downs
  - UI attributes



# Unified Intelligence Suite Advanced Reporting

- Extends standard reporting platform to an integrated information portal
- Power user and Developer tools
  - Unrestricted wizard capabilities
  - User defined data sources
  - RSS, XSLT, Permalinks, HTML post
- Integration of third-party data
- Cradle-to-grave templates
- Compressed summarization

The screenshot displays a comprehensive reporting dashboard with several key sections:

- Call Life Report:**
  - General Call Attribute: Peripheral Call Type (Pre-Rx), Call Disposition (Handle), ANI (30375), Answered in Service Level.
  - Routing Attributes: Trunk Group (ALA\_PG3\_ALAMO\_DOWNS\_20), Call Type (IVR\_SBC).
- Call Queuing Information:**

Network	Delay Time	Local Q Time	Delay Time	Aban Time
14	7	0	7	0
- Call Handling Information:**

Agent	Agent #	Talk Time	Hold Time	Conference Time
L16997, F16997	55185	2441	721	0
- ICM Call Attributes:**

ICR Call Key	ICR Call Key Parent	Router Call Key Day	Router Call Key #
1074138306	148408	26861	1
- Call Variable Information:**

Variable	Variable	Variable	Variable	Value
1	2	3	4	6
12826	Unknown		6933	
- Morning Airport Impact:** A weather map showing precipitation (LOW, MEDIUM, HIGH, RAIN, ICE, SNOW) across various cities including Seattle, Portland, San Francisco, Los Angeles, Phoenix, Albuquerque, Denver, Kansas City, Minneapolis, Chicago, Dallas, Houston, New Orleans, Atlanta, Memphis, Detroit, Buffalo, New York, Boston, and Washington, DC. A weather widget for Chicago, IL shows 36°F, Cloudy, and a wind shift at 11 mph.
- Agent Performance Scorecard:**

Agent: John Ringo

KPI	Actual	Goal	Met	Team
<b>Company Objectives</b>				
Overall Quality Score	87%	90%	😊	89%
Revenue per Call	\$32.34	\$30.25	😊	29.23
First Call Resolution	67%	70%	😊	71%
<b>Improve Productivity</b>				
Average Handle Time	254	240	😞	241
% AUC Time	9%	10%	😊	8.5%
% Wrap-up Time	7%	5%	😊	6%
% Hold Time	4%	5%	😊	5.5%
<b>Increase Efficiency</b>				
% in Adherence	83%	90%	😞	89%
% Logged Time to Payroll	84%	90%	😞	90%

# Unified Customer Voice/Video Portal





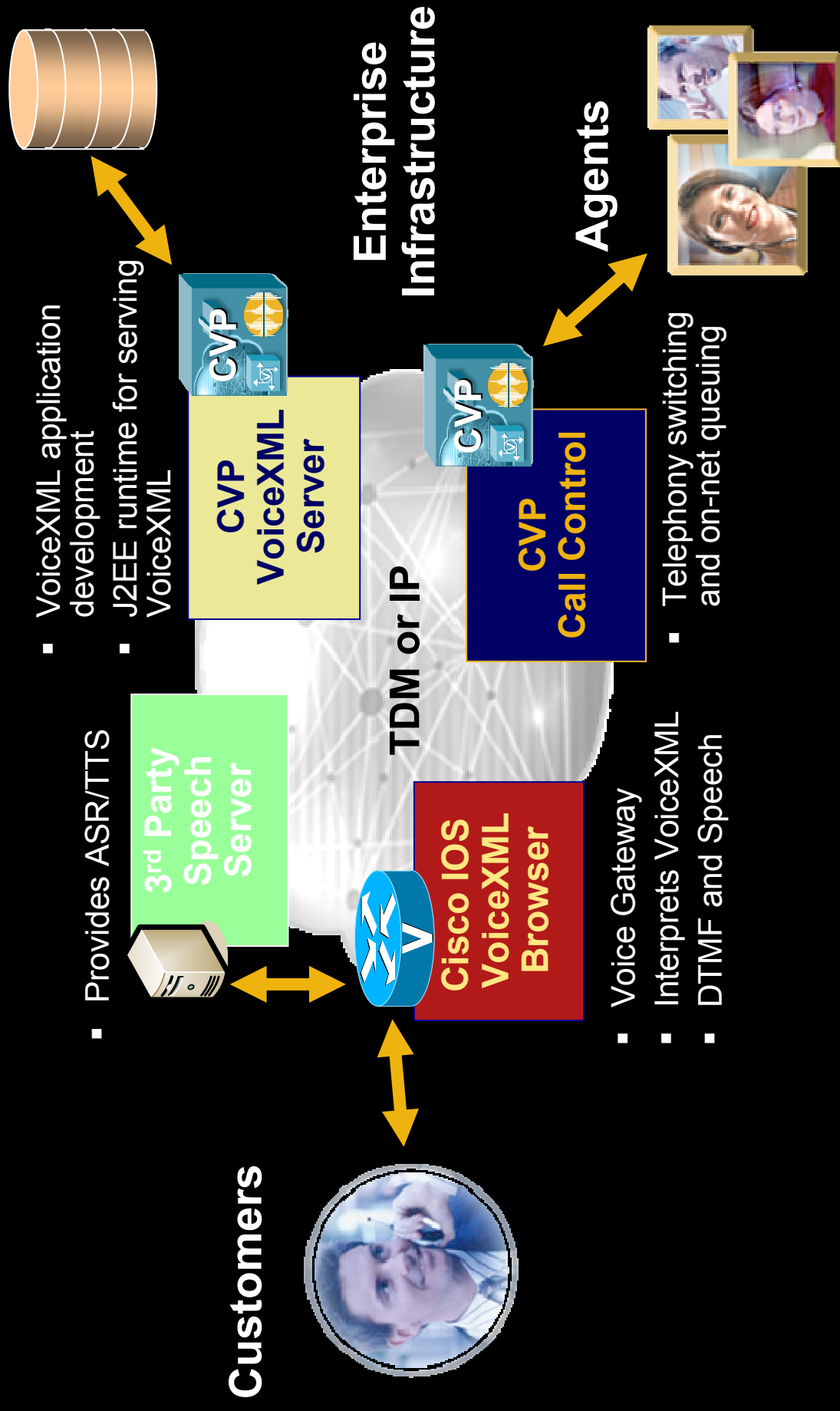
# Unified Customer Voice Portal Overview

Unified CVP provides a powerful new approach to drive a positive customer experience in the Contact Center by combining:

- Self Service (IVR)** – VoiceXML, speech, service creation and mgmt
- Video** – Video self service, video queuing and active video agent
- Call Control** – SIP B2BUA and H.323 support for network queuing
- Call Routing** – multi site intelligent call routing via IP and TDM
- Reporting** – cradle to grave data repository to drive reports
- Management** – centralized web based OAM&P
- Vendor interoperability** – integration with leading ACDs and IVRs

This single package delivers an **open architecture enabling a true “portal”** for service delivery in the Contact Center.

# Cisco Unified Customer Voice Portal Components





# Unified Customer Voice Portal 7.0 Overview

- The UCVP 7.0 release adds **VIDEO** self-service and queuing capabilities to UCVP, fully-integrated with UCCX
- Variety of endpoints supported including 3G Mobile, Video Kiosk, Web, and Soft-clients
- Provided through integration with video components from RADVISION®
- Video-enabled customer service
  - Agents viewable by customer
  - Agents can “push” informational videos to customer
  - Video automatically played during self-service interactions



# Unified Customer Voice Portal 7.0 Video Kiosk

- A Video Kiosk is a supported video client that is connected to the IP Network
- Video Kiosk examples:
  - Cisco IP Phone with Cisco Unified Video Advantage (CUVA)
  - Cisco 7985 Video Phone (supported w/ CUCM 7.0)
- Kiosk components can be bundled into a third-party hardware chassis that may also include document scanners, card readers, etc.
- Kiosks could be placed in Enterprise branch locations (e.g. a bank or retail store), or in public places (e.g. an airport or train terminal).



# Unified Customer Voice Portal 7.0 Features

## **Video Menu**

Caller is presented IVR menu selections via video--much faster than audio menus

Caller makes menu selections via keypad or speech

## **Video Self-Service**

Caller selects pre-recorded video or live ("streaming") video for viewing

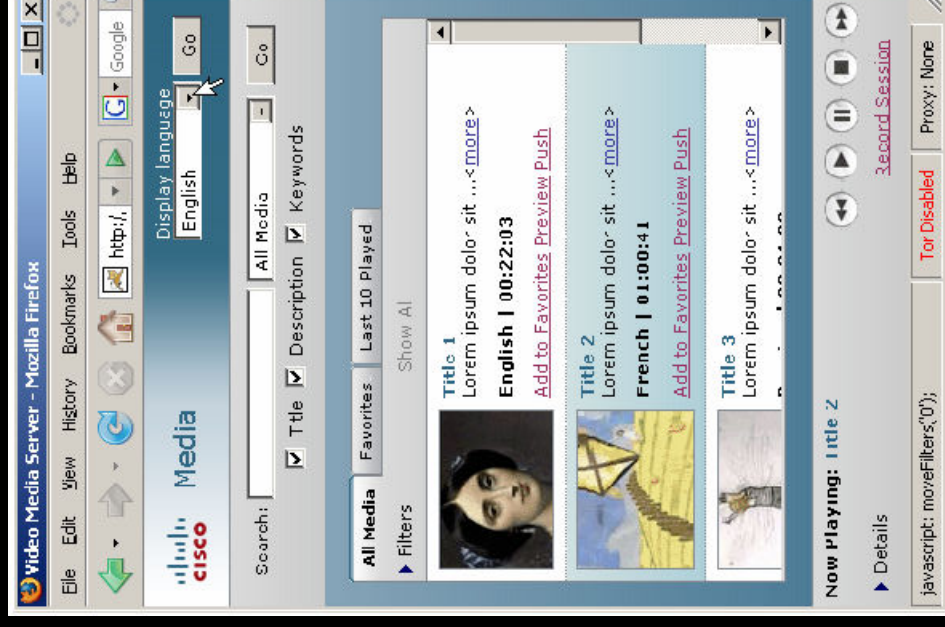
Great tool for demonstrating how to perform a task

## **Video Queuing**

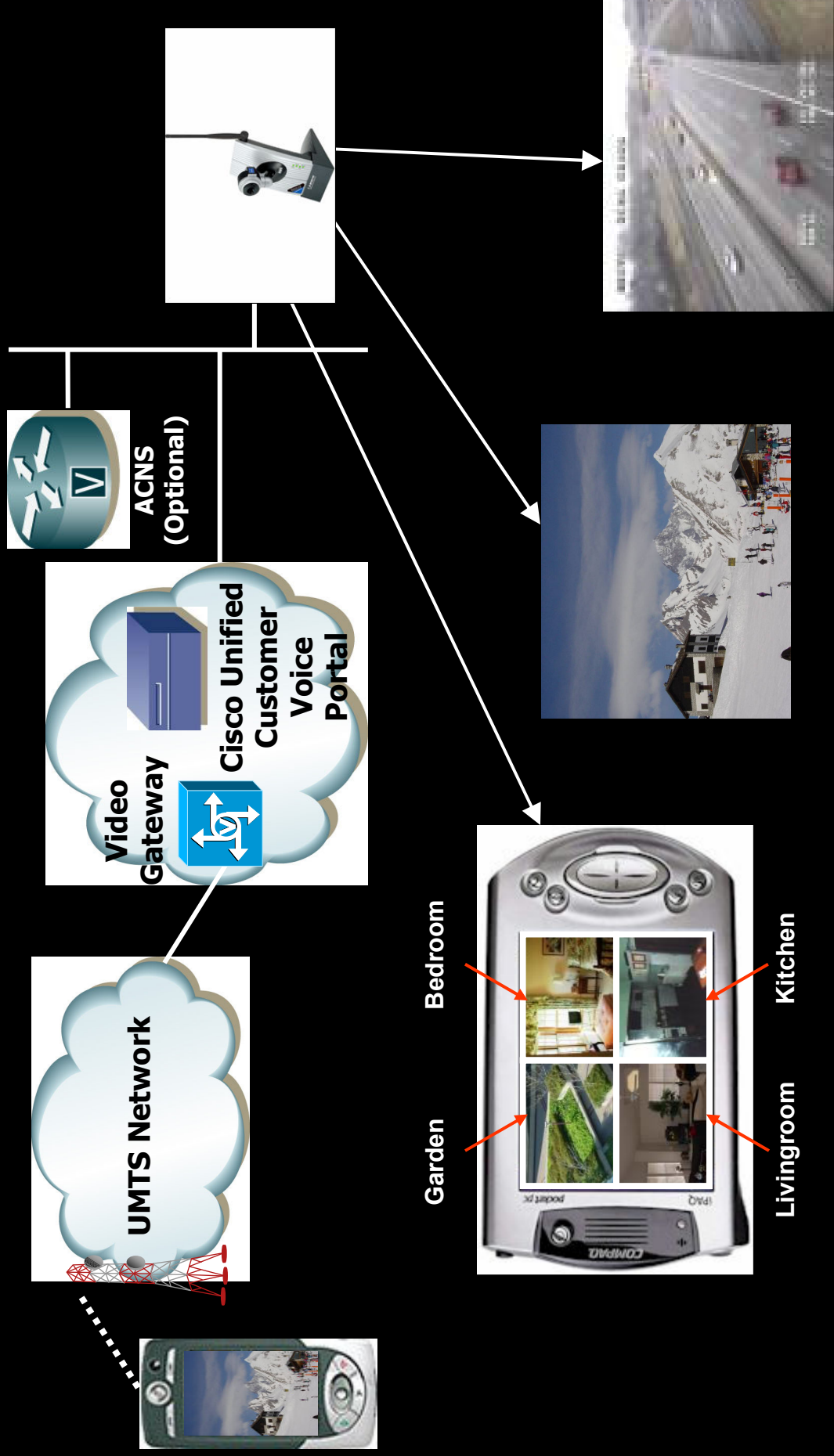
Caller sees video (pre-recorded or live/streamed) while in queue for an agent

# Unified Customer Voice Portal 7.0 Video Agent

- Point-to-point video between agent and caller
- One-way: Caller sees agent, or agent sees caller
- Two-way: Both parties see each other
- Agent can select video (pre-recorded or live/streamed) to be viewed by caller



# Unified Customer Voice Portal 7.0 Examples



# Unified Customer Voice Portal 7.0 Components

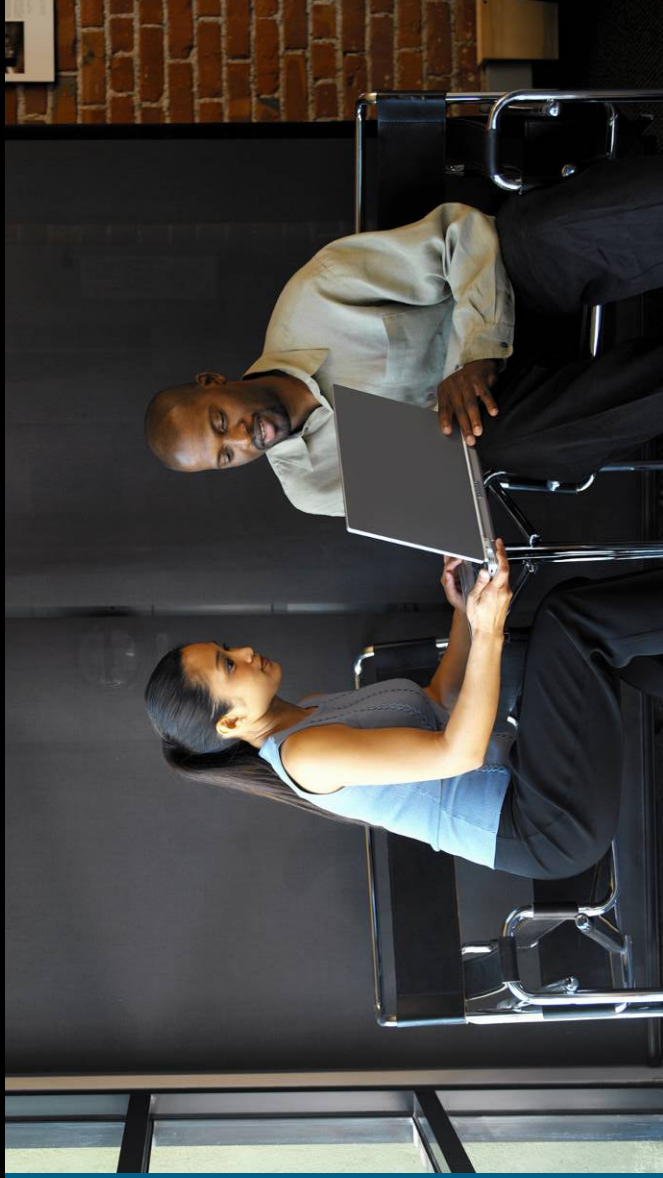
- Cisco Unified CVP 7.0 Call Server (**no special video licenses are needed**)
- Cisco Unified Contact Center Enterprise (**no special video licenses are needed**)
- Cisco Unified Communications Manager
- Cisco Media Conferencing Unit (MCU) Components
  - IPVC-3545-CHAS (The MCU chassis)
  - IPVC-3545-MCU\* (1 MCU card required per chassis)
  - IPVC-3545-EMP\* (1 EMP card required per chassis, up to a max of 2 EMP cards)
- \* **Requires a firmware conversion--provided by RADVISION®**
- RADVISION®'s "Video Communication Package for Cisco Unified Customer Voice Portal" (available from RADVISION®; contains RADVISION®'s IVP, iContact, and MSP software)
- 3G Gateways (only for 3G Mobile deployments) - initial release supports RADVISION® Gateway
- Video endpoints (for callers and agents)

# Unified Customer Voice Portal 7.0 Sizing

- Unified CVP: For sizing purposes, Unified CVP video ports are treated the same as audio ports
- MCU:
  - MCU Chassis with 1 MCU card and 1 EMP card supports 48 CIF video ports (or 96 QCIF video ports)
  - MCU Chassis with 1 MCU card and 2 EMP cards supports 96 CIF video ports (QCIF capacity remains at 96 QCIF video ports)
  - MCU video ports are consumed by: Video caller, Video agent, CVP plays video to the caller, Agent plays video to the caller, Video session is recorded. Example-- If an agent plays video to the caller while the session is recorded, then four video ports are consumed (video caller, video agent, play of video, recording)
- Other: Sizing for RADVISION® components should be obtained from RADVISION®



# Q&A





# Backup Slides



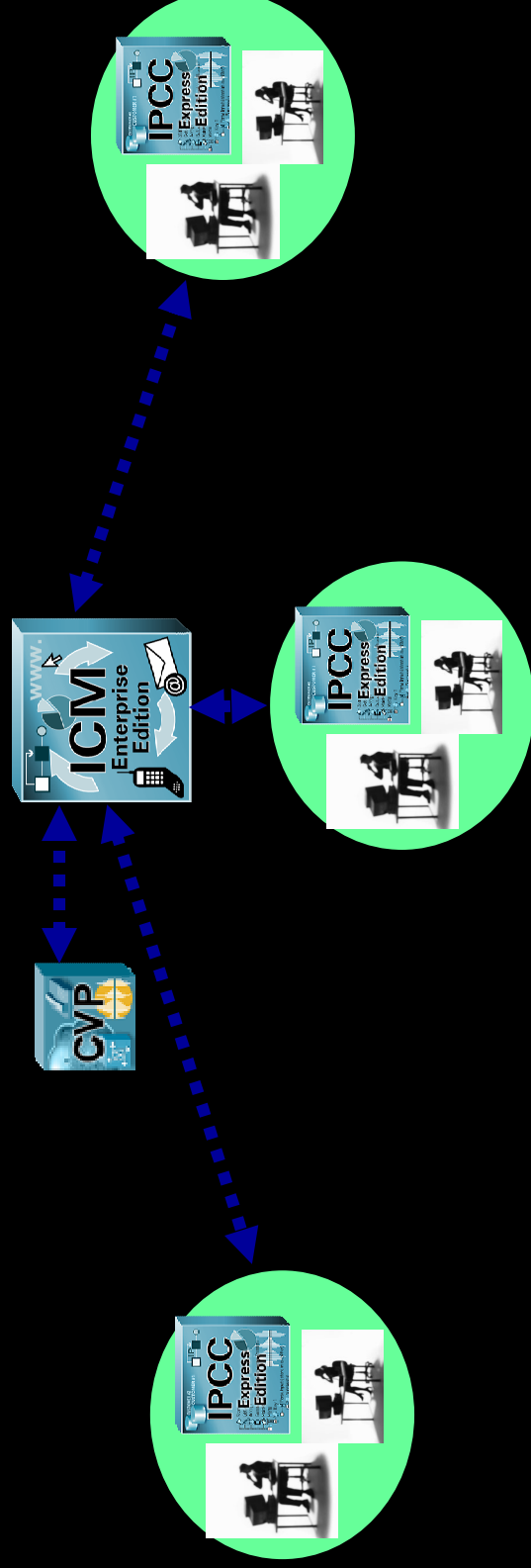
# Parent/Child Deployment Model

As the Cisco Unified Contact Center and Contact Center Express systems have become more widely deployed, our 3,000+ customers asked us...

- For a way to link multiple Contact Center Express systems into a larger enterprise-wide routing solution across multiple Express systems
- For a way to scale beyond the 8,000+ Cisco Unified Contact Center agents – how about 25,000 agents?
- For a way to deploy distributed Cisco Unified Contact Center systems like a “nodal ACD” replacement to provide local survivability
- For a way that existing ICM customers can link in Outsourcers running Cisco’s contact center systems as part of the virtual contact center



# Parent/Child Deployment Model



Cisco Unified Contact Center Express introduced the ability to integrate with a “Parent” ICM for enterprise-wide virtual routing and reporting. The Express Server hosts a Contact Center Gateway Peripheral Gateway (PG) that links the Express “Child” like any other ACD to the ICM Parent.

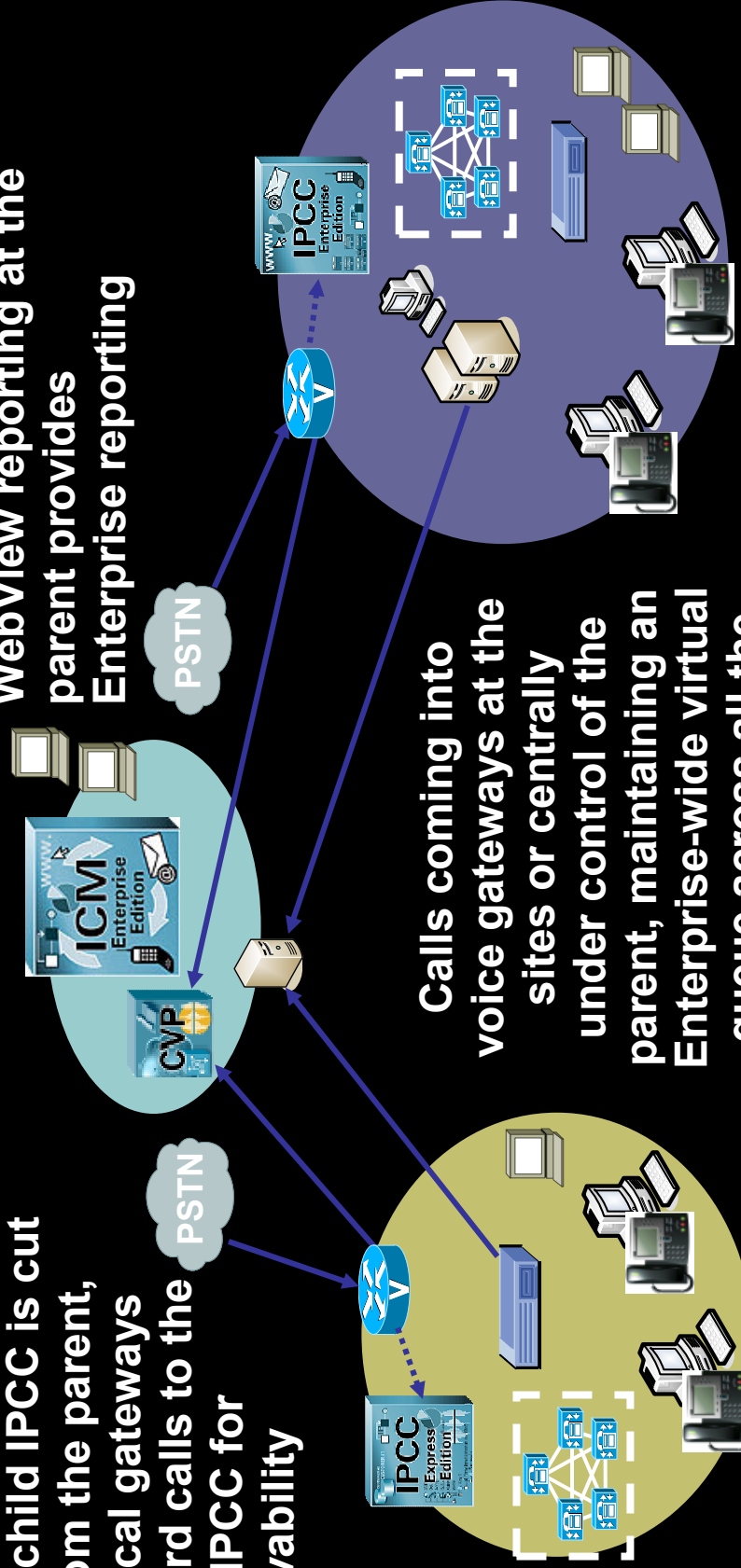
Configuration data from Express (CSQ’s, Agents, etc.) are sent automatically to the ICM Parent. No duplicate config is needed.

Call and event data is passed to the ICM Parent as well, for enterprise-wide routing, reporting and CTI across all the sites.

# Parent/Child Deployment Model

If the child IPCC is cut off from the parent, the local gateways forward calls to the local IPCC for survivability

WebView reporting at the parent provides Enterprise reporting



Calls coming into voice gateways at the sites or centrally under control of the parent, maintaining an Enterprise-wide virtual queue across all the child sites

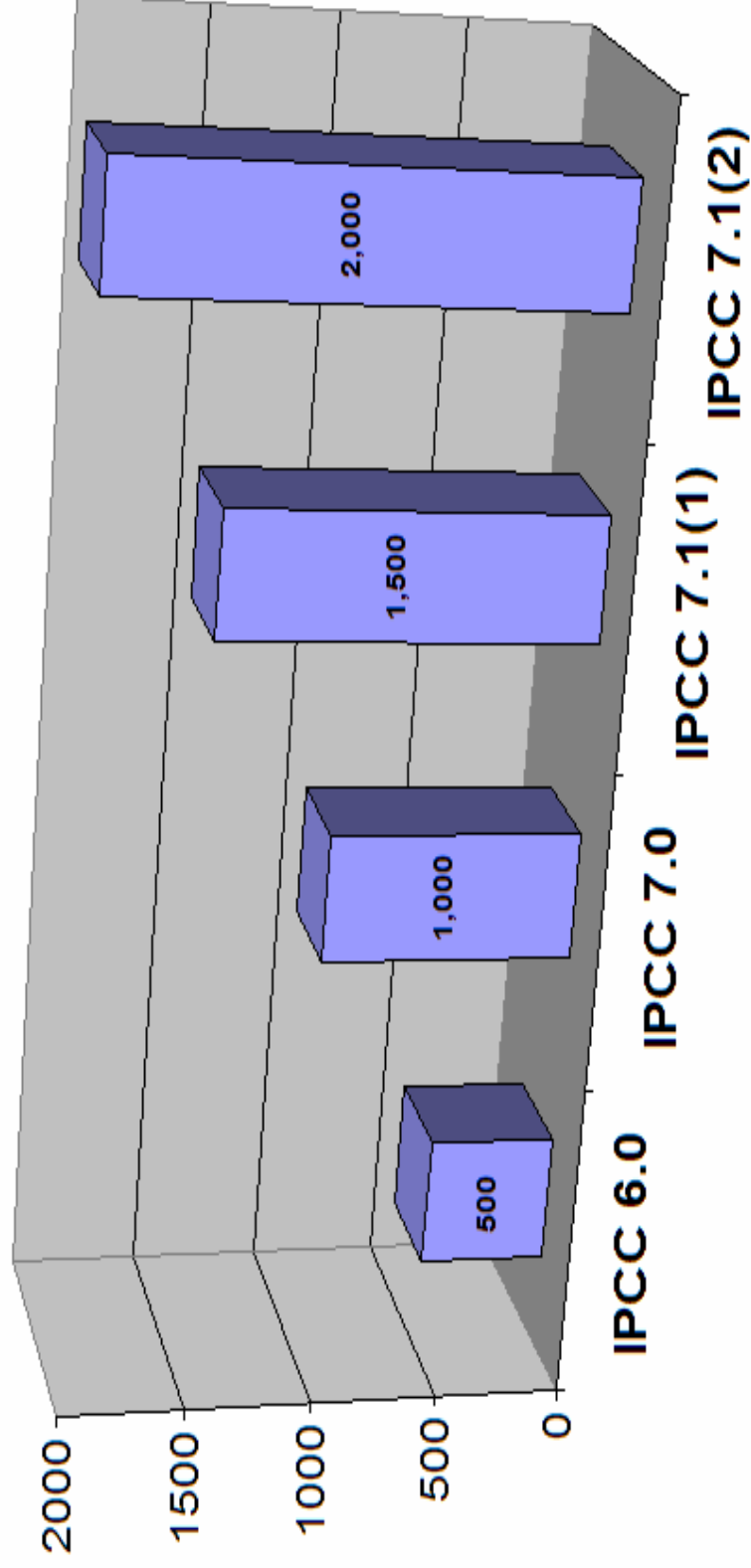
Child CCE local agents, Cisco CallManager cluster, gateway under CVP control for routing

Child CCX local agents, Cisco CallManager cluster, gateway under CVP control for routing

Child sites have local “nodal” reporting

# Scalability Improvements

## Agent PG Capacity



**Improved PG capacity lowers server count for large systems**



# Citrix and Windows Terminal Services

	Windows Terminal Services	Citrix MetaFrame PS 4.0	Citrix Web Client	Citrix PN Agent	Citrix Program Neighborhood
CTIOS Agent Desktop	✓	✓	✓	✓	✓
CTIOS IPCC Supervisor	✓	✓	✓	✓	✓
CTIOS Outbound Option	✓	✓	✓	✓	✓
C++ CIL	✓	✓	✓	✓	✓
Java CIL	✓	✓	✓	✓	✓
.NET CIL	✓	✓	✓	✓	✓
COM CIL	✓	✓	✓	✓	✓
CTIOS ActiveX	✓	✓	✓	✓	✓

**Citrix MetaFrame Presentation Server supported only on Windows Server 2000 or 2003**

# Cisco Unified Contact Center Enterprise

## 7.5 Snapshot

PG/CTI OS  
Peripheral  
Consolidation

New Reporting  
Solution

Agent and VRU PG  
Scalability

Translation Route  
Exhaustion

Localization  
Additions

MSSQL 2005

.NET 3.0 CTI Toolkit  
Support

System Contact  
Center Enterprise  
CVP Support

CTI OS SNMP  
Support

CUCM 7.0 Support

Presence Integration  
(Expert Advisor & CAD)

CTI OS, CAD, CCMP  
Accessibility

Purge and Heap Mgmt  
Optimization

QoS on JTAPI and  
GED-125

New Outbound Ops  
Reports



Windows  
Vista

CSA 5.2

# Primary Feature Objectives

- Scalability, Server Consolidation and TCO Reduction
  - Increased number of configured PGs per system
  - MR PG and Outbound Dialer co-residency on System CCE
  - Support multi-peripheral PG/CTI OS server (up to 10)
  - Scale up Agent and VRU PG servers by 25 – 50%
  - Virtualization (TBD)
- Serviceability
  - Simplifying Installer for localizations with new Language Pack
  - Purge and PG Half Hour Update Improvements
  - CTI OS Instrumentation and Alarming (SNMP)
  - Outbound improvements

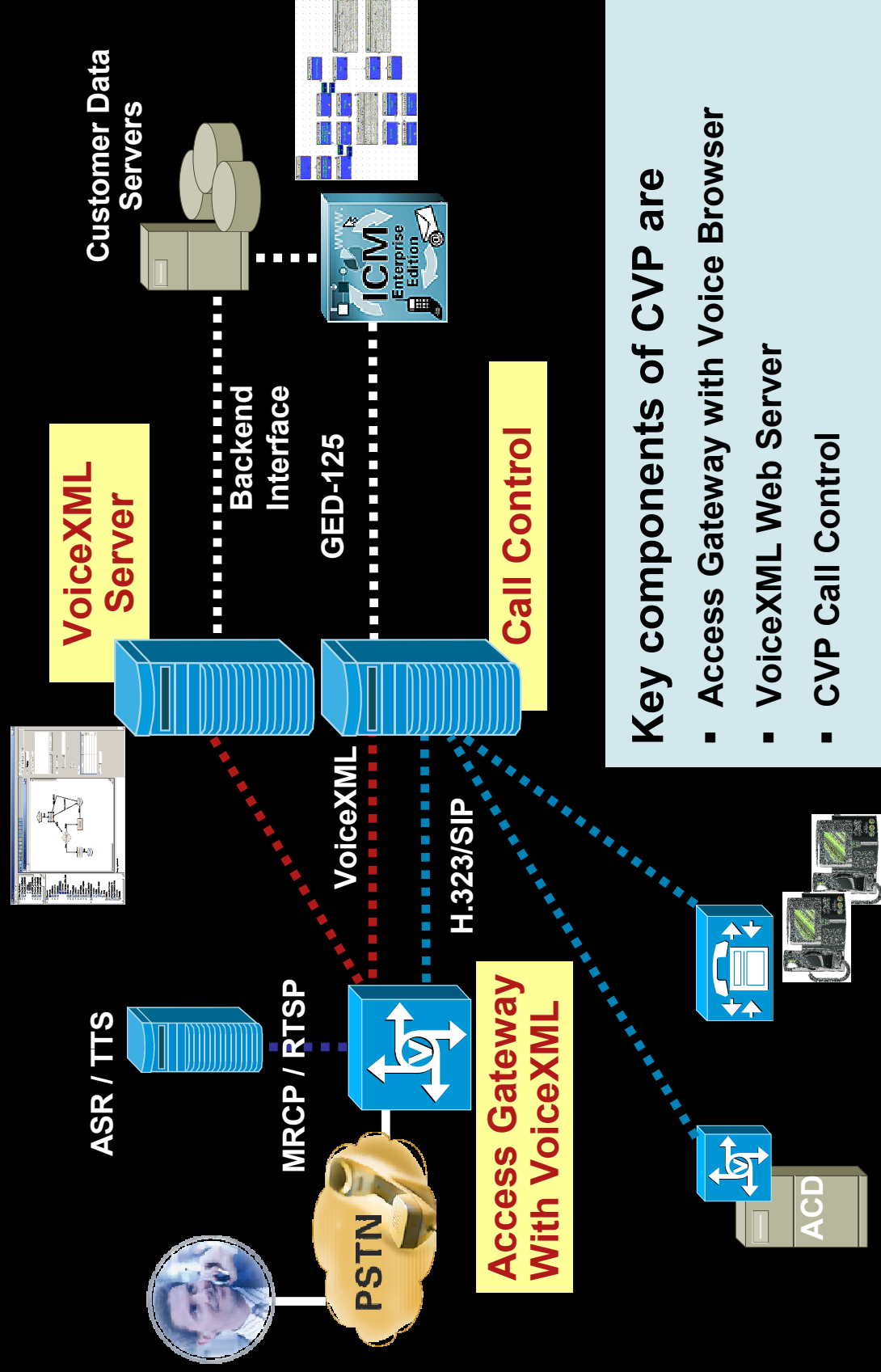
# Cisco Unified Customer Voice Portal



- Voice XML based IVR
- Highly scalable and distributed architecture for ...
- Deployment of speech applications and ...
- Voice over IP call control using H.323 and SIP

# Cisco Unified Customer Voice Portal

## Detailed Components

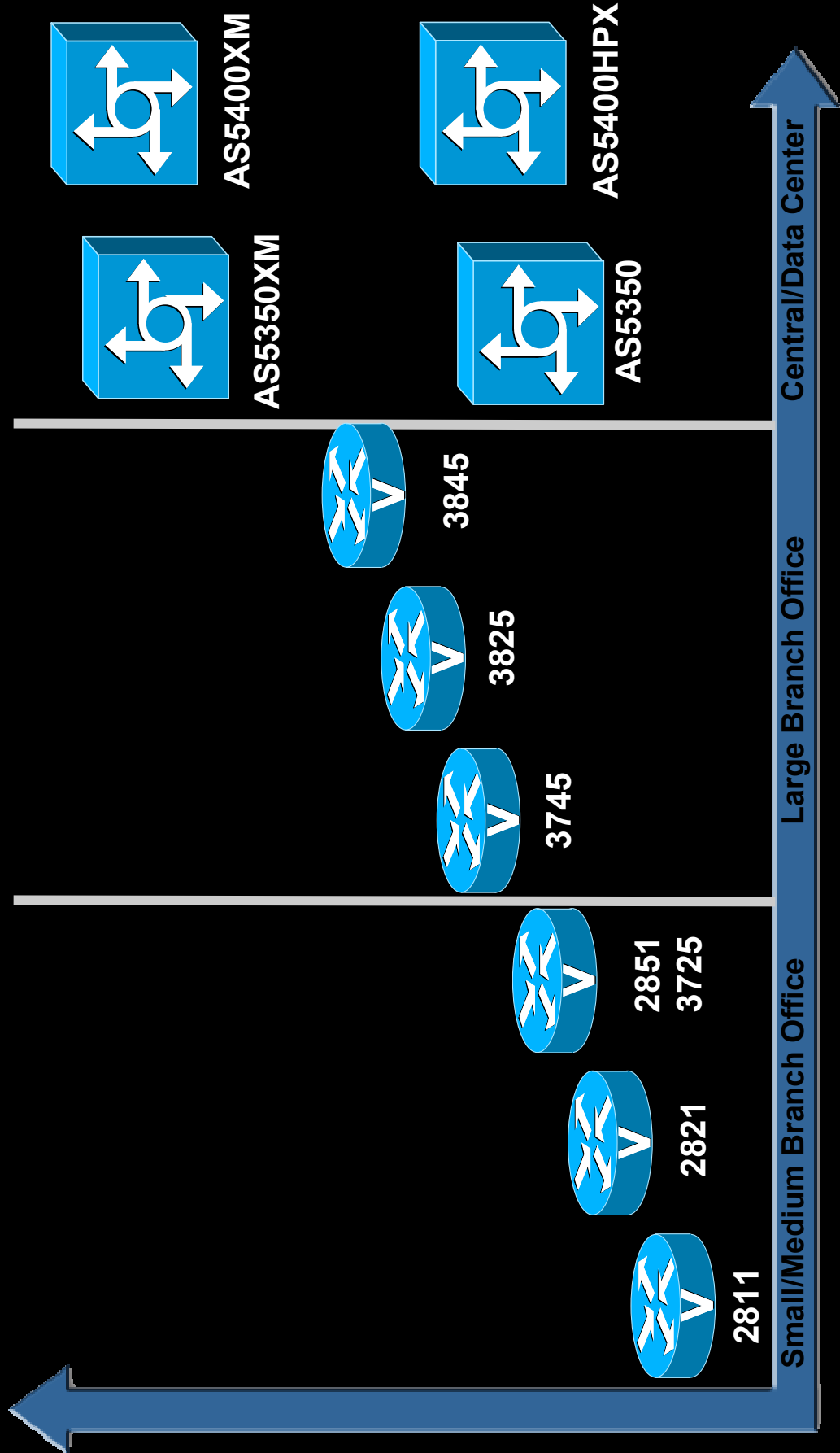


**Key components of CVP are**

- Access Gateway with Voice Browser
- VoiceXML Web Server
- CVP Call Control

# Voice Gateway and VXML Sessions

## Cisco Unified Customer Voice Portal VoiceXML Browser Options



# Cisco Unified Customer Voice Portal

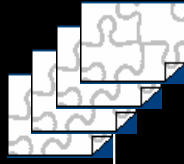
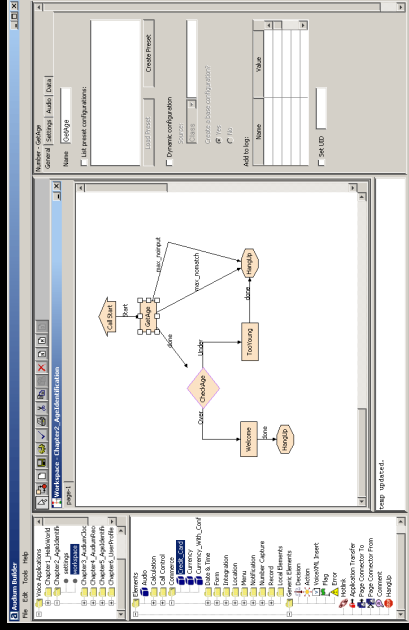
## VoiceXML Server

- Suitable for building full self-service applications
- Rapid application design and development
- Graphical development environment (don't have to touch VoiceXML)
- Reusable components
  - Script Elements
  - Dialogs
  - Back-end interfaces
- Create your own customised script elements



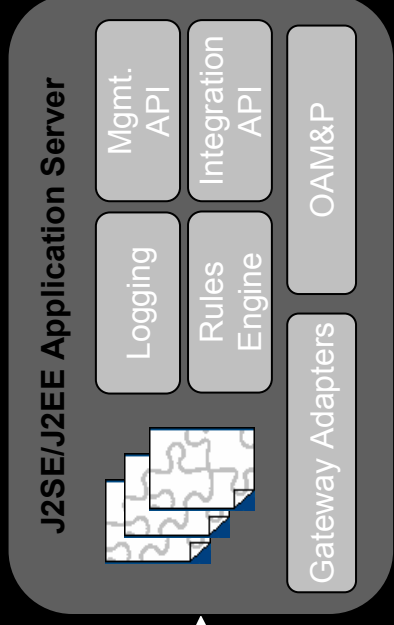
# Cisco Unified Customer Voice Portal VoiceXML Server

CVP Studio  
Service Creation Environment

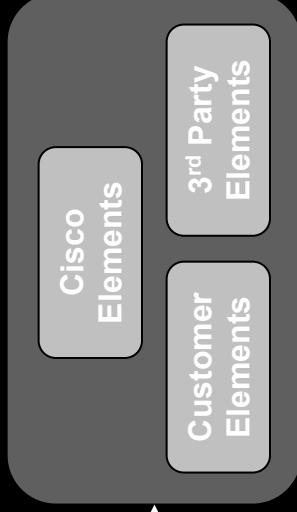


Application

CVP VoiceXML Server  
Application Execution



CVP OpenSDK  
Reusable Element Repository



# Cisco Unified Customer Voice Portal VoiceXML Service Creation

Script element properties and configuration

Application call flow

Projects and files explorer

Script element palette

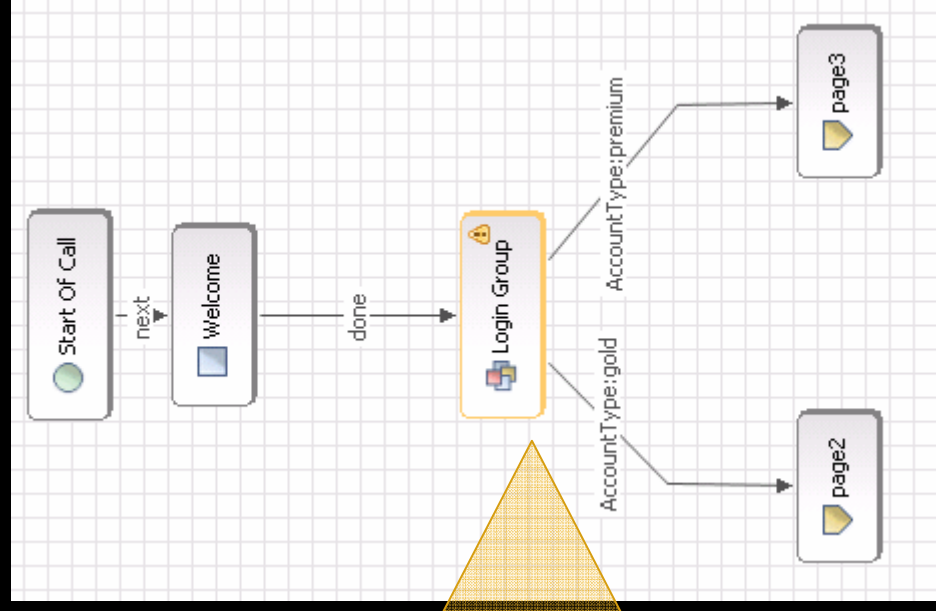
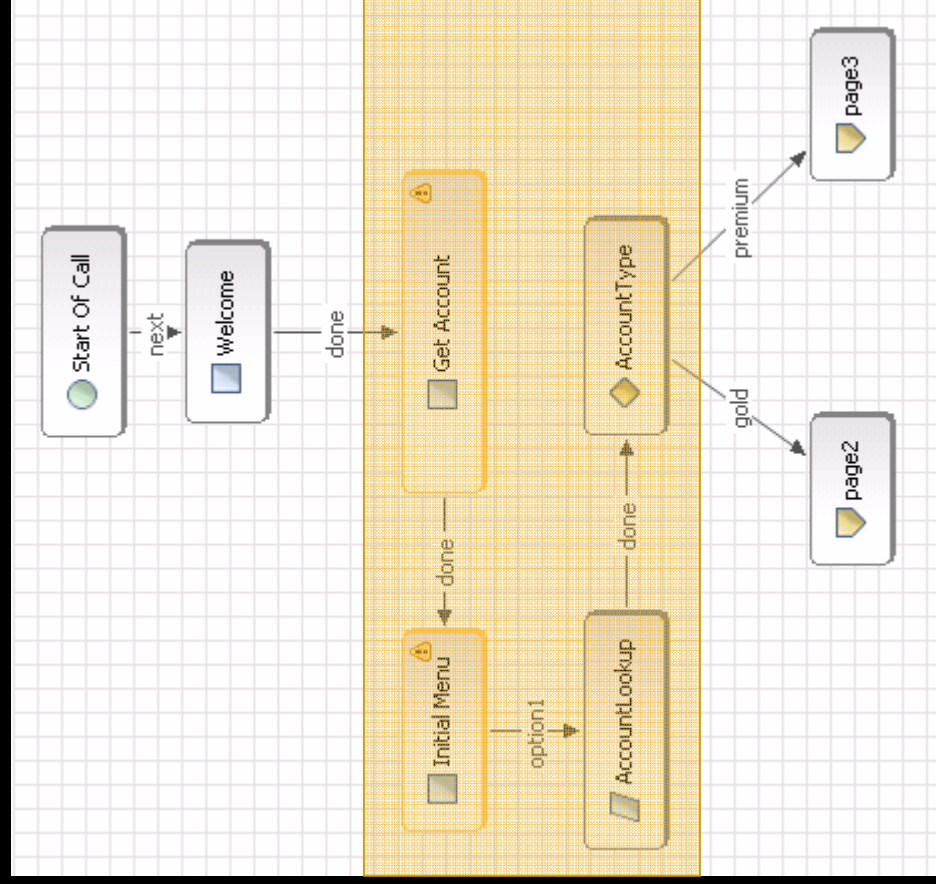
The screenshot displays the Cisco Unified CVP Builder interface. The main workspace shows a call flow diagram with nodes like 'Database\_01', 'BO\_Closed\_Today', 'BO\_Closed', 'BO\_Open\_Now', 'Available', and 'Transfer\_Fail'. The 'Elements' palette on the left lists various script elements such as 'Audio', 'Call Control', 'Cisco', 'Commerce', 'Context', 'Date & Time', 'Form', 'Integration', 'Math', 'Menu', 'Notification', 'Number Capture', 'Record', 'Local Elements', 'Element Groups', 'Action', 'Decision', 'Flag', 'VoiceXML Insert', 'Holevent', 'Hotlink', 'Application Transfer', and 'Page Entry'. The 'VoiceXML Property' table on the right is highlighted with a red box and contains the following data:

Name	Value
* Transfer Destination	{Data.Element
* Destination Type	tel
* Connect Timeout	15
* Max Transfer Time	true
* Bridge	aal
Transfer Audio	

The 'Projects and files explorer' on the top left shows a tree view of the project files, including 'branch\_xfer', 'callflow', 'app.callflow', 'ICM Request', 'deploy', and 'app.callflow'.

# Cisco Unified Customer Voice Portal VoiceXML Service Creation

## Element Grouping



# Cisco Unified Customer Voice Portal

## VoiceXML Service Creation

### Decision Editor

**Time\_Of\_Day**

Expression	Action	Exit State
If the hour (0-23) of the current date/time < the number 12	then return	morning
If the hour (0-23) of the current date/time >= the number 17	then return	evening

Otherwise Return Exit State:

First Argument  
 Argument Type:   
 When:   
 Date Part:

Operator:

Second Argument  
 Argument Type:   
 Constant Number:



# Cisco Unified Customer Voice Portal VXML Studio/Server

## Prompt Manager

Cisco Unified CVP Builder - branch\_xfer - Cisco Unified CVP VoiceXML Studio

File Edit Callflow Navigate Search Project Run Window Help

Prompt Manager X Cisco Unified CVP Problems

audio item 1

Page	Element Group	Element Name	AG Name	A...	Audio Item N...	URI	TTS Content	Audio Type
page 1	Alternative_Number...	Initial	Initial	1	audio item 1	try_later.wav		Static Audio
page 1	Available	Initial	Initial	1	audio item 1	available.wav		Static Audio
page 1	Available	Initial	Initial	1	audio item 2	trying.wav		Static Audio
page 1	Available	Initial	Initial	1	audio item 3	trying.wav		Say It Smart
page 1	Available	Busy	Busy	1	audio item 1	busy.wav		Static Audio
page 1	Available	NoAnswer	NoAnswer	1	audio item 1	no_answer.wav		Static Audio
page 1	Available	Phone Error	Phone Error	1	audio item 1	problem.wav		Static Audio
page 1	BO_Closed	Initial	Initial	1	audio item 1	closed.wav		Static Audio
page 1	CF_NotAvail	Initial	Initial	1	audio item 1	unavailable...		Static Audio
page 1	CF_NotAvail	Initial	Initial	1	audio item 2	trying.wav		Static Audio
page 1	CF_NotAvail	Initial	Initial	1	audio item 3	trying.wav		Say It Smart
page 1	CF_NotAvail	Busy	Busy	1	audio item 1	busy.wav		Static Audio
page 1	CF_NotAvail	NoAnswer	NoAnswer	1	audio item 1	no_answer.wav		Static Audio
page 1	CF_NotAvail	Phone Error	Phone Error	1	audio item 1	problem.wav		Static Audio
page 1	Speak DN	Initial	Initial	1	audio item 2	diald_num...		Static Audio
page 1	Speak DN	Initial	Initial	1	audio item 1	alternate.wav		Say It Smart
page 1	Transfer_Fail	Initial	Initial	1	audio item 1	alternate.wav		Static Audio
page 1	Transfer_Fail	Initial	Initial	1	audio item 2	alternate.wav		Say It Smart
page 1	Transfer_Fail	Busy	Busy	1	audio item 1	busy.wav		Static Audio
page 1	Transfer_Fail	NoAnswer	NoAnswer	1	audio item 1	no_answer.wav		Static Audio
page 1	Transfer_Fail	Phone Error	Phone Error	1	audio item 1	problem.wav		Static Audio

Row 0 of 21

# Cisco Unified Customer Voice Portal OAM&P

## Operation, Administration, Management & Provisioning

The screenshot displays the Cisco Unified Customer Voice Portal interface. The browser address bar shows the URL: <https://bristol:9443/oaamp/controlCenter.do>. The page title is "Cisco Unified Customer Voice Portal". The user is logged in as "administrator". The interface includes a navigation menu with options like "System", "Device Management", "User Management", "Bulk Administration", "SNMP", "Tools", and "Help". The main content area is titled "Control Center - Network Map" and shows a "Device Pool" for "Bedfont-10-Lab default". A table of devices is displayed, with columns for Hostname, IP Address, Device Type, Status, and Active Calls. The table contains 10 rows of device information. Below the table, there is a note: "Note: Each column can be sorted by clicking the column header. This sorting is on a per-page basis only." The page footer includes a JavaScript callout: `javascript:controlCenterShowPoolContents('Bedfont-10-Lab', '2');`.

Hostname	IP Address	Device Type	Status	Active Calls
ASR-TTS-1	10.52.202.48	Speech Server	N/A	N/A
Bristol	10.52.202.38	VoiceXML Server	Up	0
Bristol	10.52.202.38	Call Server	Up	0
CVP-GK	10.52.200.50	Gatekeeper	N/A	N/A
CVP-VXML	10.52.200.51	Gateway	N/A	N/A
Helsinki	10.52.202.43	Reporting Server	Not Reachable	N/A
Madrid-7.1	10.52.202.39	ICM Server	N/A	N/A
Red-dwarf	10.52.200.40	CCM Server	N/A	N/A
Turin	10.52.202.44	Media Server	N/A	N/A

## Control Center for device status monitoring / control



# Cisco Unified Customer Voice Portal OAM&P

## Operation, Administration, Management & Provisioning

The screenshot displays the 'Edit CVP Call Server Configuration' page in the Cisco Unified Customer Voice Portal. The page is organized into several sections:

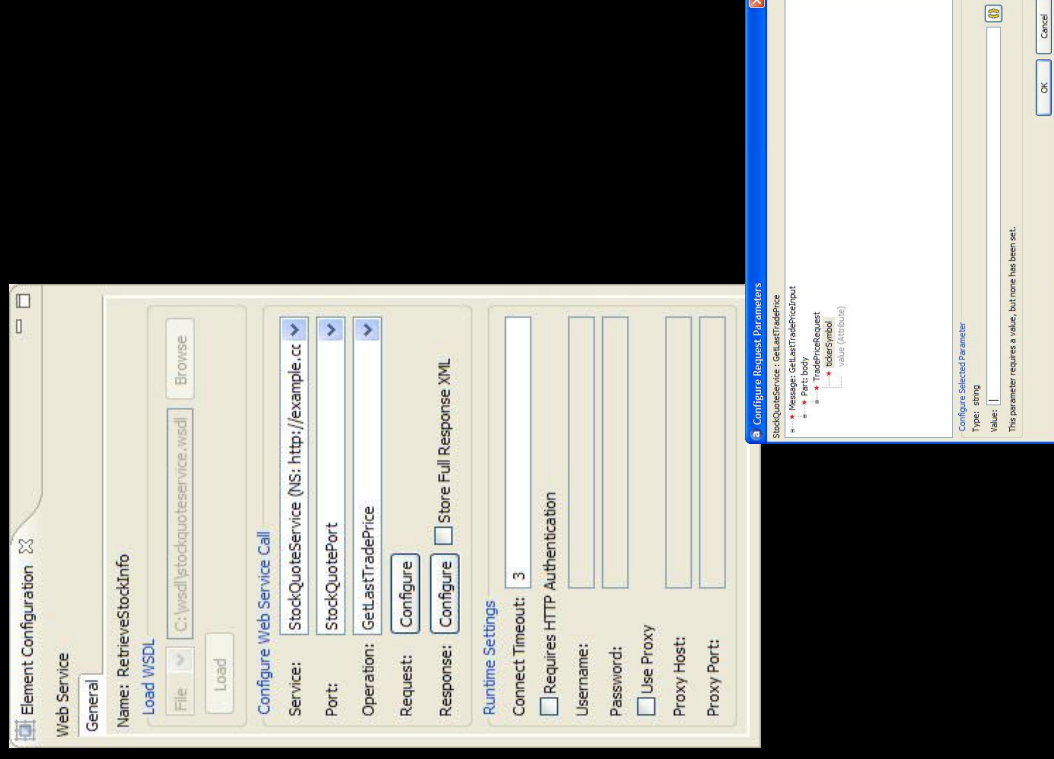
- Local Static Routes:** This section allows for configuring static routes for local routing without an outbound proxy. It includes fields for 'Dialed Number (DN)', 'IP Address/Hostname', and a list of routes. A route for '5...red\_dwarf' is currently selected.
- Dialed Number (DN) patterns:** This section is used for configuring patterns for sending calls to the originator. It includes fields for 'Dialed Number (DN)', 'DN pattern outbound invite timeout', and 'Timeout:'. A pattern for '5...15' is currently selected.
- Configuration:** This section contains various SIP-related settings, including:
  - Enable outbound proxy:  Yes  No
  - Use DNS SRV type query:  Yes  No
  - Outbound proxy Host: -
  - Outbound proxy Port: 5060
  - Outgoing transport type: UDP
  - Port number for incoming SIP requests: \* 5060
  - Incoming transport type: TCP+UDP
  - DN on the Gateway to play the ringtone: \* 91919191
  - DN on the Gateway to play the error tone: \* 92929292
  - Time to wait for ICM instructions: \* 2000 milliseconds
  - SIP info tone duration: \* 100 milliseconds
  - SIP info comma duration: \* 300 milliseconds
  - Generic Type Descriptor (GTD) Parameter Forwarding: JUS
- QoS:** This section includes a 'Select QoS level:' dropdown menu set to 'cs3'.

The page also features a navigation menu at the top with options like 'System', 'Device Management', 'User Management', 'Bulk Administration', 'SNMP', 'Tools', and 'Help'. A 'View:' dropdown is set to 'Offline'. A blue banner at the bottom of the configuration area reads 'Call Server SIP configuration'.

# Cisco Unified Customer Voice Portal

## 4.1 Snapshot

- Visual Voice Application Debugger
- Web Services Element (e.g., WSDL support)
- Enhanced multi language support
- Subroutine Element
- Eclipse version 3.2 support
- Java 5 support
- General UI improvements
- Vista Support



# Cisco Unified Customer Voice Portal

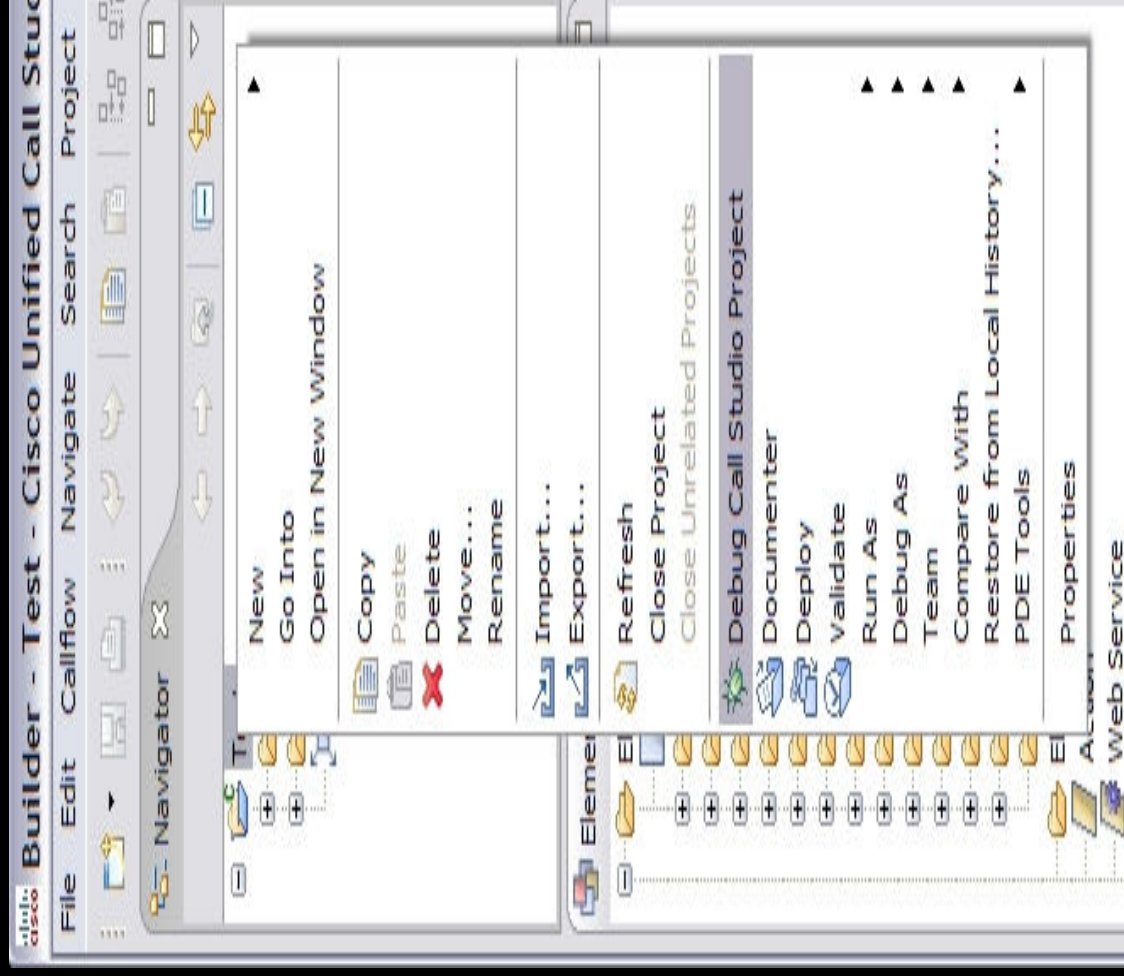
## Voice Application Debugger Overview



- **Walk through Voice Applications**
  - Without leaving Studio**
- **Inspect element and session data**
- **Zero configuration**

# Cisco Unified Customer Voice Portal

## Debug a Project







# Cisco Unified Customer Voice Portal

## Debug the Application

The screenshot displays the Cisco Unified Call Studio Debug interface. The top-left pane shows a flowchart with nodes: Start, Audio\_01, 2\_Option\_Menu\_01, and decision\_01. The top-right pane is a table of declared variables:

Name	Declared Type	Value	Actual Type
Session Data	Session Data	test6	java.lang.String
test5	Session Data	test5	java.lang.String
test4	Element Data	one	java.lang.String
value	Element Data	one	java.lang.String
selection	Element Data	1.0	java.lang.Float
confidence	Element Data	1.0	java.lang.Float
value_confidence	Element Data	1.0	java.lang.Float
ribsutterance1	Element Data	voice	java.lang.String
ribsutterance1	Element Data	voice	java.lang.String
ribsutterance1	Element Data	one	java.lang.String
ribsutterance1	Element Data	one	java.lang.String
ribsutterance1	Element Data	1	java.lang.Integer

The bottom-left pane shows the console output:

```

My Configuration [Call Studio Project]
SpeechWorks OSB 1.2 with OSR 1.0/1.1
SynTellect 5.1 with Nuance 8.5
Tellme VoiceXML 2.1 with Nuance 8
SpeechGenie 6.2 with OSR 2.0
VoiceGenie 7 with OSR 3
West OpenVXI 2.0 with OSR 3
Loading application 'HelloWorld'... Done
Loading application 'Tests'... Done
Jul 31, 2007 11:23:02 PM org.apache.catalina.core.ApplicationContext log
INFO: org.apache.webapp.balancer.BalancerFilter: init(): ruleChain: [org.apache.v
Jul 31, 2007 11:23:02 PM org.apache.catalina.core.ApplicationContext log
INFO: ContextListener: contextInitialized()
Jul 31, 2007 11:23:02 PM org.apache.catalina.core.ApplicationContext log
  
```

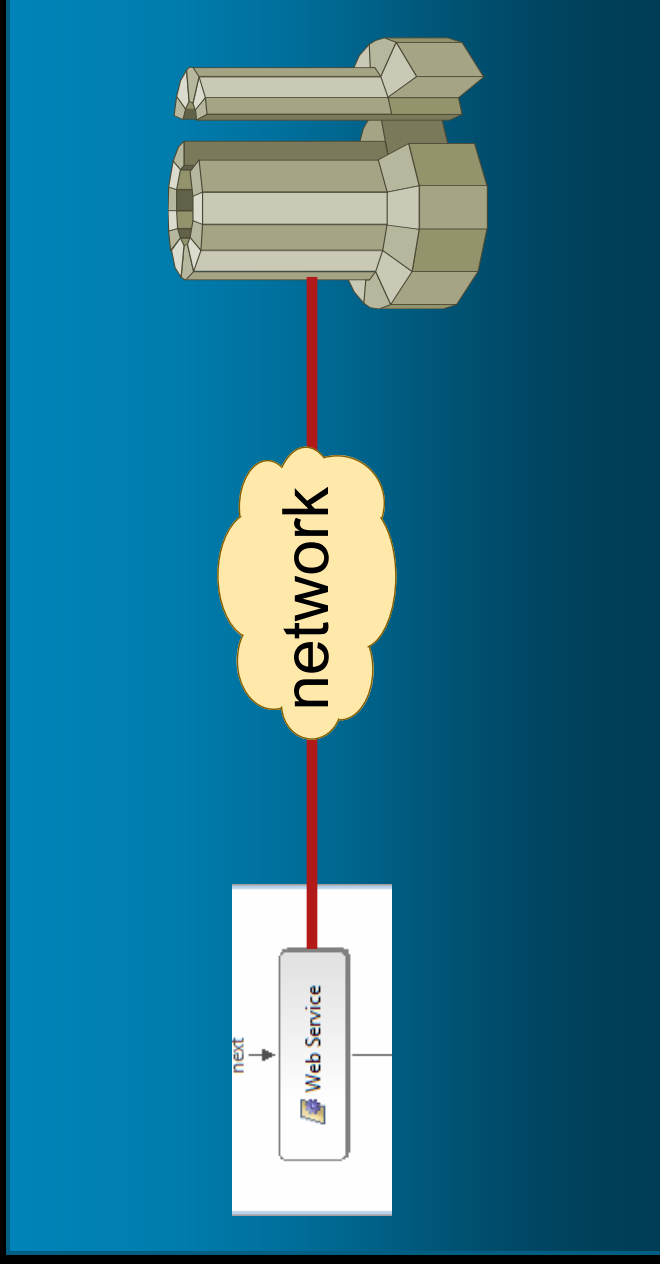
The bottom-right pane shows the voice browser configuration:

```

<?xml version="1.0"
xmlns="http://www.w3.org/2001/10/synthesis">
  </speak>
  </speak>
  Listen:
  # [link1@application.grammar] grammar: help
  # [field2@field.grammar] option: 1 1 2 2
  # [field3@field.grammar] option: 1 1 2 2
  Enter: nomatch
  Header: TTS:Dom[<?xml version="1.0"
encoding="ISO-8859-1"?>
<speak version="1.0"
xmlns="http://www.w3.org/2001/10/synthesis">
  </speak>
]
  Listen:
  # [link1@application.grammar] grammar: help
  # [field4@field.grammar] option: 1 1 2 2
  # [field5@field.grammar] option: 1 1 2 2
  
```

# Cisco Unified Customer Voice Portal

## Web Services Overview

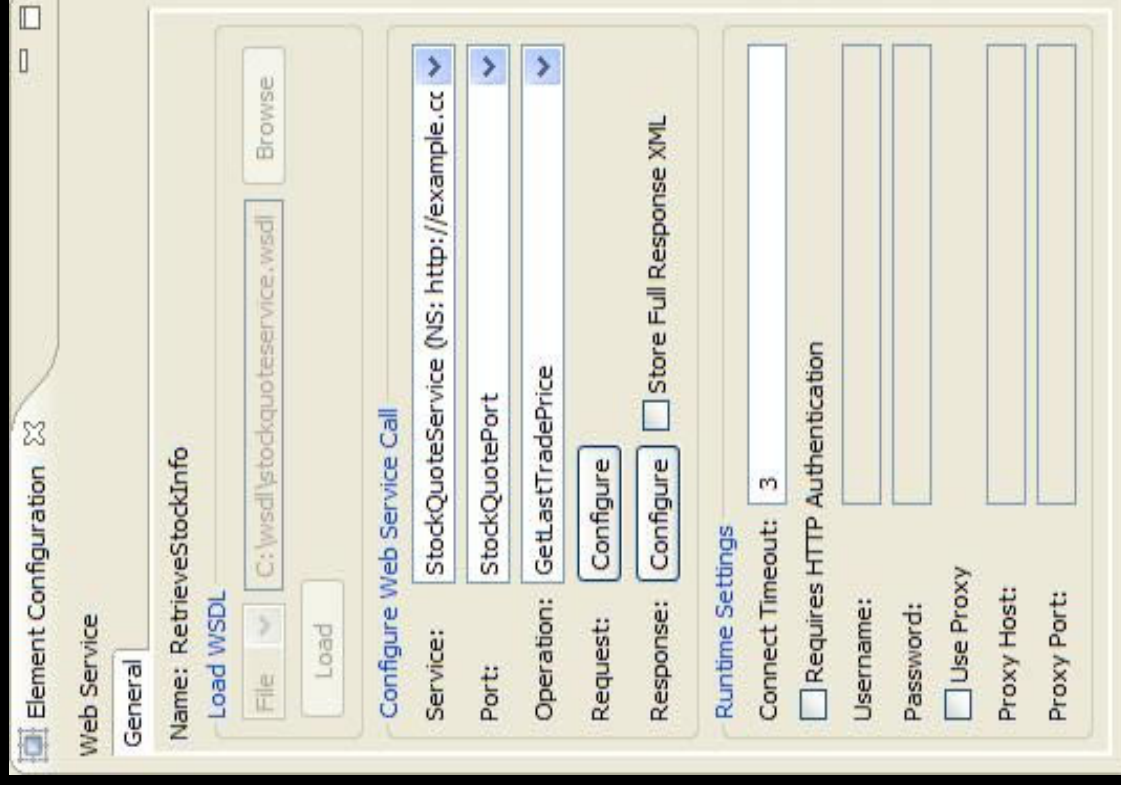


- With a **SOA**, resources become **Web Services**
- **Load a WSDL, use the service**  
**No custom element needed**



# Cisco Unified Customer Voice Portal

## Create a Web Service Element



# Cisco Unified Customer Voice Portal

## Configure Request Parameters



# Cisco Unified Customer Voice Portal

## Configure Response Parameters

**a** Configure Response Parameters

StockQuoteService : GetLastTradePrice

- Message: GetLastTradePriceOutput
  - Part: body
    - TradePrice
      - price

Selected Parameter Storage

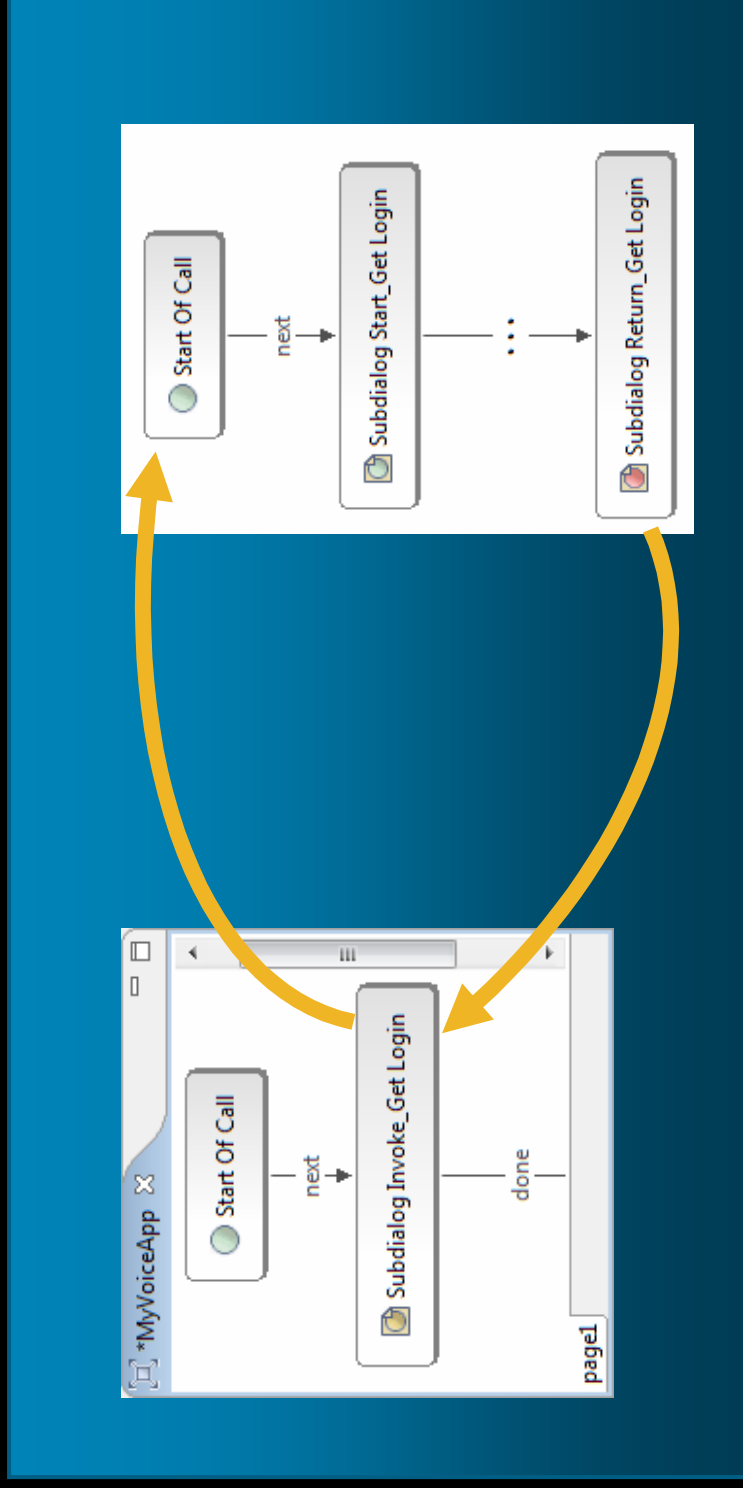
Type: float

Var name:

Store in:  Element Data  Session Data

# Cisco Unified Customer Voice Portal

## Subdialog Invoke

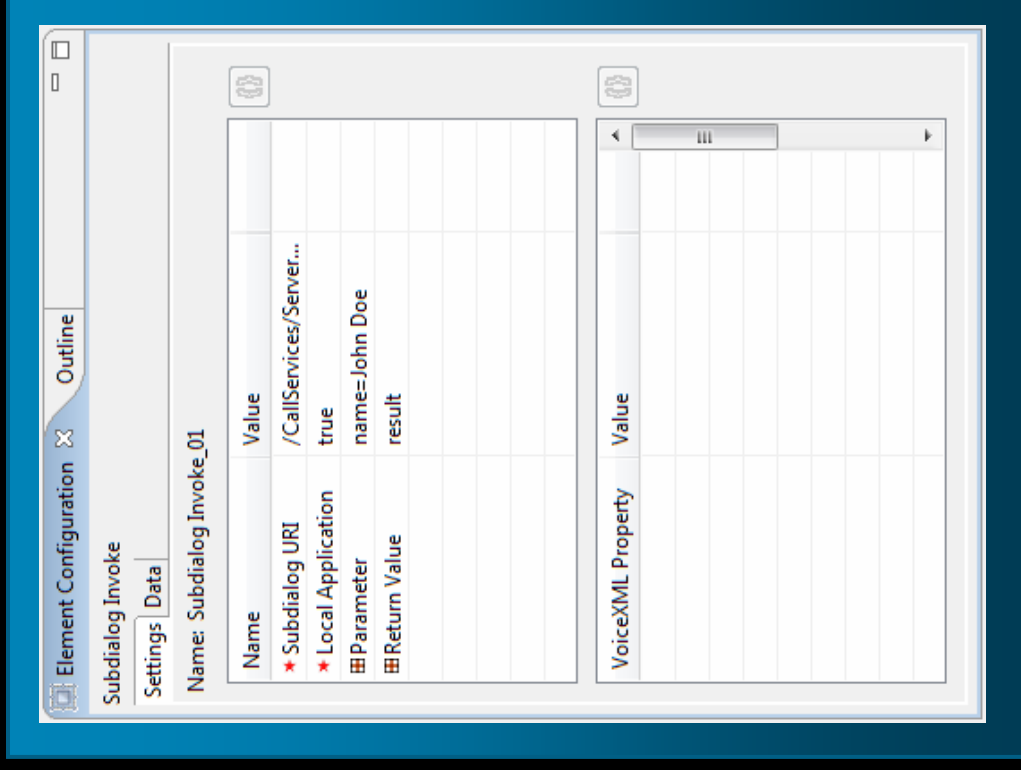


- **Temporary transfer control to another application**  
**Studio Voice App, .jsp, flat VXML, etc.**

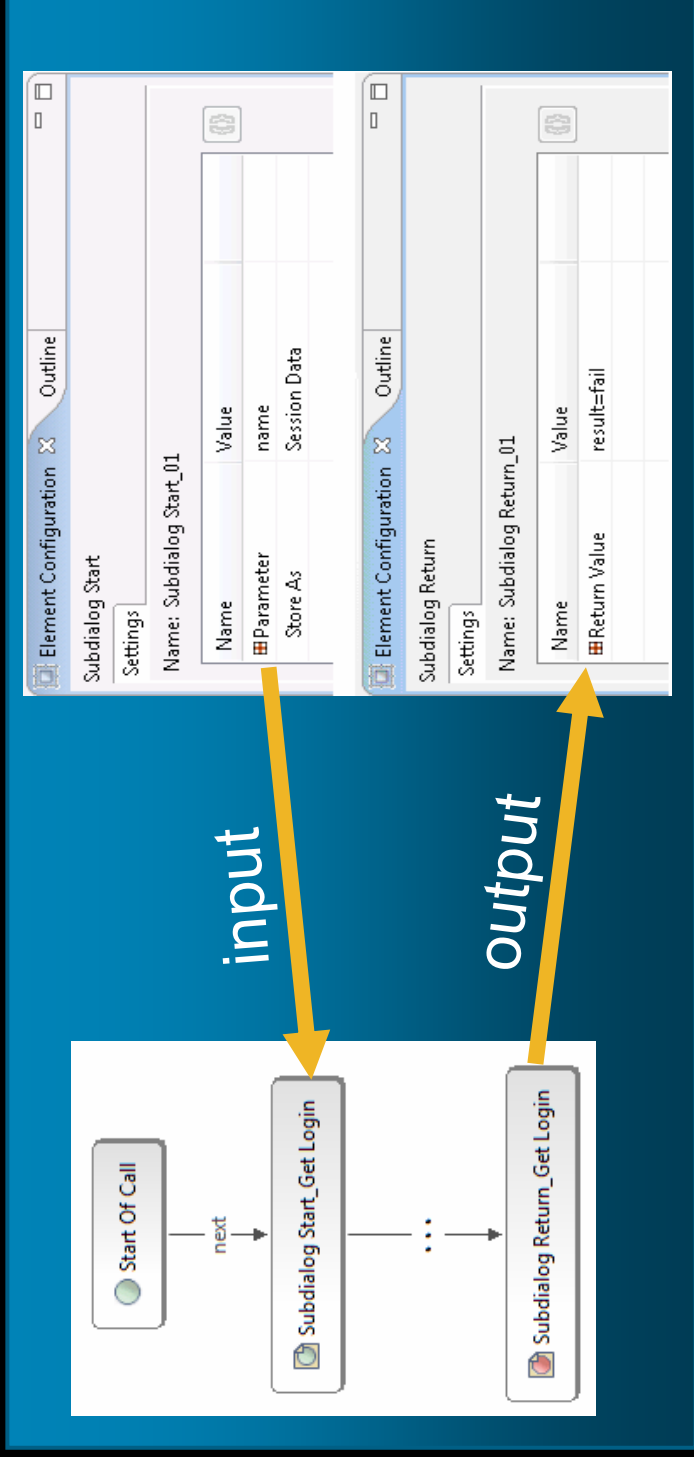
# Cisco Unified Customer Voice Portal

## Subdialog Invoke Configuration

- **URI of application to invoke**
  - Local?**
- **Parameters**
  - Input**
  - Output**
- **Additional Properties**



# Cisco Unified Customer Voice Portal Invoked Application Configuration



- **Subdialog Configuration**
  - Expects input**
  - Produces output**

# Cisco Unified Customer Voice Portal Multiple Language Support (i18n)

## Element Configuration (In Dispatcher)

The left screenshot shows the 'Audio' configuration page. A context menu is open over 'audio item 1', with 'Set Language' selected. The 'Set Language' dialog box is open, showing a list of languages: en-US, en-CA, en-GB, en-UK, en-AU, es-US, es-ES, fr-US, fr-CA, fr-FR, and Other... The 'fr-CA' option is selected.

The right screenshot shows the 'Form' configuration page. The table below lists the configuration parameters:

Name	Value
Input Mode	voice
Noinput Timeout	5s
Form Max NoInput Co...	3
Form Max NoMatch C...	3
Form Confidence Level	0.40
Voice Grammar	
Voice Keyword	en-US;en-US;;English
Voice Keyword	en-US;fr-CA;;français
Voice Keyword	en-US;es-US;;español
Help Voice Keyword	
Disable Hotlinks	false
Field Name	foundation_fld
Field Slot	
Slot Element Data	
Maxnbest	1
Secure Logging	false

- Configure Audio Item  
Set language
- Configure Grammar  
Set language



# IOS VoiceXML Browser

## Recent Feature Enhancements Support

- **VXML 2.0**

12.4 (11)T

### VoiceXML Forum Certified

Transfer enhancements  
application to application  
information data passing, blind  
and bridged transfers

Added options for “exact”  
versus “approximate” phrase  
recognition for more flexibility

- **VXML 2.1**

12.4 (15)T

Supporting all nine mandatory  
features

Major features address areas of  
dynamic prompt, script and  
grammar usage, barge-in,  
speech recognition

- **Media Resource Control  
Protocol MRCPv2**

12.4 (15)T

MRCP is the standard for all  
Speech Recognition vendors  
MRCP v2 uses SIP and SDP

Hot word recognition

Recording of utterances

12.4 (15)T

- **HTTP Over SSL**

Provides transaction data  
security between browser  
and the application server

# Cisco Unified Customer Voice Portal

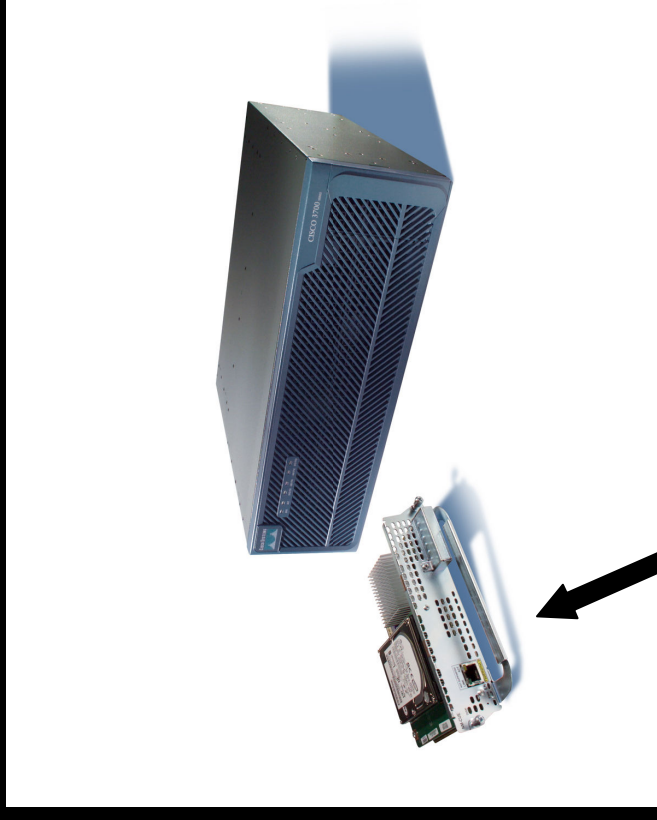
## Future Capabilities in Planning

- ASR/TTS on network module
- Media Forking
- Warm/Consultative transfer support\*  
Without Callmanager
- Universal Edition/CVP integration
- CCXML Support
- Resource Management

# Cisco Unified Customer Voice Portal

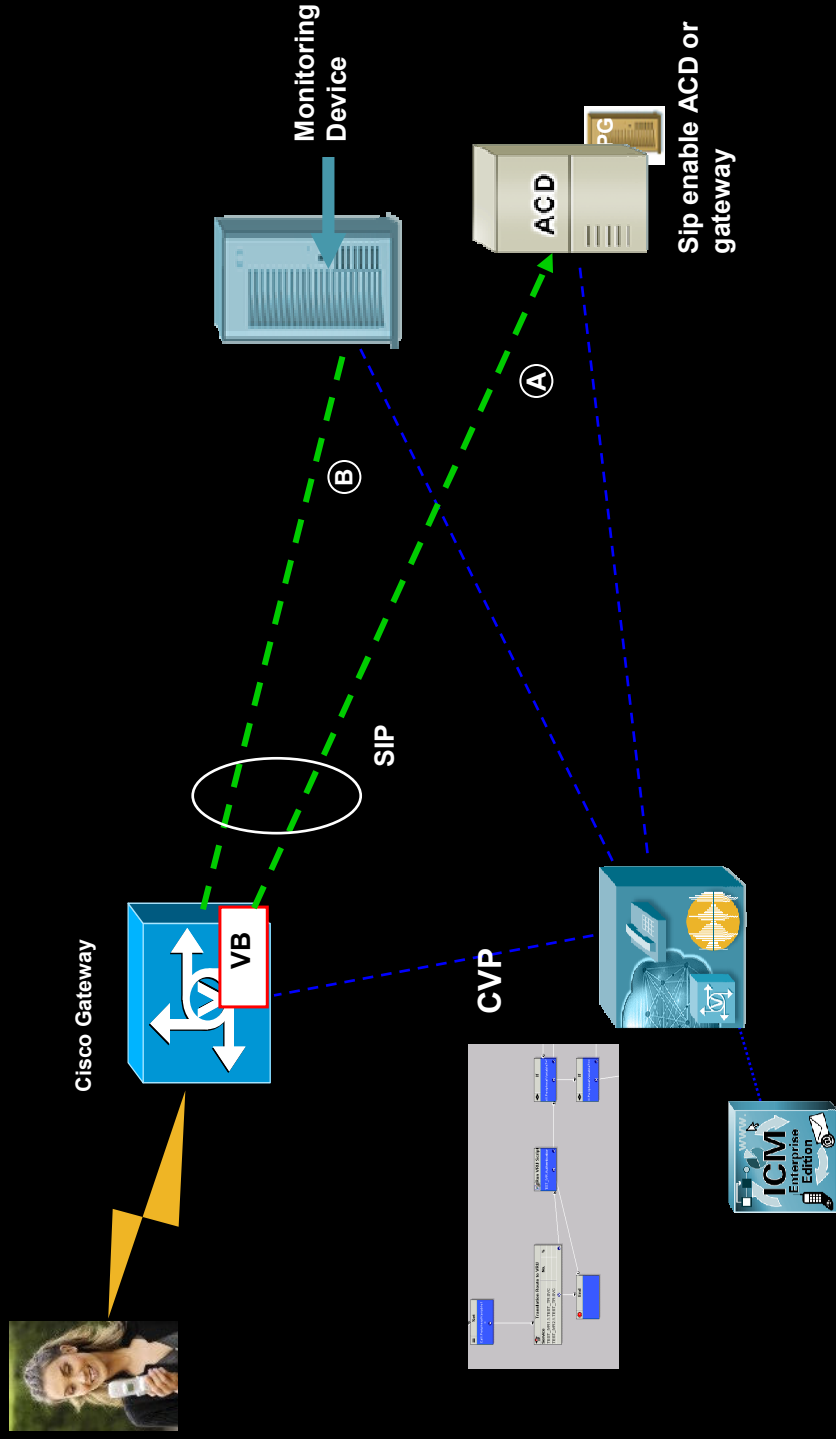
## ASR & TTS on a Network Module

- **Local, integrated ASR/TTS for small deployments**
  - 4-8 ports support
  - Target distributed enterprise locations
- **Support on the Cisco 2800 or 3800 ISR**
- **Planning to use Nuance 9.0**



**Network Module**

# Cisco Unified Customer Voice Portal Media Forking



**Technology enables recording and monitoring of calls  
from ingress gateway**

T1/E1 PRI  
GED-125  
SIP/H323

# Courtesy Callba

10. Gateway detects \*2 DTMF sequence and initiates callback to the callback number previously primed. Agent and caller talk.



1. Call arrives to gateway from PSTN. Tcl script runs on GW.

7. Ingress GW is now "primed" with callback number and disconnects caller. VoIP call remains intact with "faux queuing" to save GW resources.

8. Agent becomes available. Call is routed to agent via CVP.

6. VXML GW sends callback number to ingress gateway.

12. (Enhancement) Callback outcome and status (callback status, ringtime) sent to CVP reporting DB (SIP only)

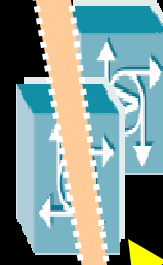
VXML Gateways

5. CVP queues caller. Caller opts for callback and keys in/speaks their callback number.

2. Gateway arms tcl for courtesy callback and sends INVITE to CVP

3. CVP sends NEW CALL to ICM

4. ICM queues caller.



11. Agent can request the callback if it fails (RNA, busy, voicemail, etc.). Agent responsible for updating ICM with callback outcome. Can be manual, but slicker if customized via desktop.

9. Agent desktop sees that callback call variable has been set and sends \*2 DTMF to ingress GW.

CTI Toolkit Agent Desktop [Win32] (7.0.0) - Janet Byron

Login    Agent State    Dial/Answer/Release    Hold/Retriev    Alt/Reconn    Conf/Transfe    Sup Assist    Tools

CallID	CallStatus	CallType	DNIS	ANI	CED	DialedNumber	Wrapup	Var1	Var2	Var3	Var4	Var5	Var6
35245651	Talking	PREROUTE_ACD_IN	2005	9789361787		5902		Callback	9789361787				

Ext: 2005 Inst: 2005    Agent ID: 2005    IP: 10.86.129.21 | Online

Courtesy Callback

Initiating Courtesy Callback to 9789361787

Success    Requeue    Release



CTI Toolkit Agent Desktop (Win32) (7.0.0) - Janet Byron

Agent State: Login, Agent State, Dial/Answer/Release, Hold/Retrieve, Alt/Reconn, Conf/Transfe, Sup Assist, Tools

CallID	CallStatus	CallType	DNIS	ANI	CED	DialedNumber	Wrapup	Var1	Var2	Var3
35248550	Talking	PREROUTE_ACD_IN	2005	9789361787		5902	Courtesy Callback	Success	NoCallback	9789361787

Ext: 2005 Inst: 2005 Agent ID: 2005

Id To: 10.86.129.21 | Online

Courtesy Callback

Initiating Courtesy Callback to 9789361787

Success

Requeue

Release



CTI Toolkit Agent Desktop [Win32] (7.0.0) - Janet Byron

Agent State: Login, Agent State, Dial/Answer/Release, Hold/Retrieve, Alt/Reconn, Conf/Transfe, Sup Assist, Tools

CallID	CallStatus	CallType	DNIS	ANI	CED	DialedNumber	Wrapup	Var1	Var2	Var3
35248551	Talking	PREROUTE_ACD_IN	2005	9789361787		5902	Courtesy Callback Requeue	Callback	3789361787	

Ext: 2005 Inst: 2005 Agent ID: 20

Ad To: 10.86.129.21 | Online

Courtesy Callback

Initiating Courtesy Callback to 9789361787

Success Requeue Release

Requeue Reason

Reason for requeue

OK

- Busy
- No Answer
- Voicemail - left message
- Voicemail - did not leave message
- Network Problems
- Wrong Person
- Other